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BULLETIN NO. 565

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DIVISION OF CHEMISTRY

## COMMERCIAL FERTILIZERS IN 1937-38



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BULLETIN NO. 183 [Page Blank in Bulletin]

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IN 1937-38



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T. O. WALTON, President



This is the annual Fertilizer Control Bulletin. It contains statistics regarding fertilizers sold in Texas, information regarding the fertilizer law, and analyses of samples of the fertilizer sold by different manufacturers. The extent to which the various manufacturers are coming up to their guarantees is shown.

The total sales of fertilizer in Texas for 1937-38 were 79,640 tons. In 1936-37 the sales were 84,938 tons. In 1935-36 they were 60,016 tons. Cottonseed meal sold as a feed but used as a fertilizer was not included in these totals. Sales of fertilizer were about 5 per cent less than last year. Practically all the sales of mixed fertilizers were confined to about 20 analyses.

Tables are given showing the extent to which the various fertilizer manufacturers met or exceeded their guarantees. The cost of fertilizer was slightly less in 1937-38 than in 1936-37.

Definitions of fertilizer terms, as adopted by the Association of Official Agricultural Chemists, are given.

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## COMMERCIAL FERTILIZERS IN 1937-38

G. S. Fraps, State Chemist, T. L. Ogier, Associate State Chemist,  
and S. E. Asbury, Assistant State Chemist

Fertilizer laws require fertilizer to be correctly labeled so that the purchaser can know what he is getting. The object of the fertilizer law is to protect the farmer or other users of fertilizer against misrepresentation of the composition or fertilizing value of the fertilizer as well as manufacturers and dealers against unfair competition due to such misrepresentation.

The first Texas fertilizer law was passed in 1899. It was revised and amended in 1911. The results of the fertilizer inspection have been published in bulletins of the Texas Agricultural Experiment Station regularly since 1906. This is the thirty-sixth Fertilizer Control Bulletin. It contains statistics, explanations of terms, a report on the analyses made in enforcing the provisions of the Fertilizer law, and definitions of fertilizers.

### Explanation of Terms

**Nitrogen** refers to the total nitrogen in the fertilizer. It is necessary in proper amounts for the development of all parts of the plant, but an excess of nitrogen delays maturity and is liable to promote growth of stalk and leaves at the expense of fruit. Nitrogen is needed by many Texas soils, especially the sandy soils in the eastern and northern parts of the State. Since nitrogen is used in comparatively large quantities by plants and is, to some extent, washed from the soil, it is usually the first element to become depleted from a fertile soil.

**Available phosphoric acid** is the phosphoric acid in fertilizers which can be taken up quickly by plants. Phosphoric acid promotes the fruiting of plants, though it is also necessary for the development of all parts of the plant.

**Total phosphoric acid** is the entire quantity of the phosphoric acid present, whether highly available or not. A guarantee of total phosphoric acid in place of available is made in bone, tankage, and rock phosphate.

**Potash** guaranteed in a fertilizer is required by the law to be soluble in water. Potash, like nitrogen, is needed by all parts of the plant, but especially by stalks and leaves. An excess of potash delays maturity and is liable to promote growth of the stalk and leaves at the expense of the fruit. When potash is abundantly supplied, plants may take up more than they need. Potash is present in soils more abundantly than phosphoric acid.

**Valuation per ton** represents the approximate average cost of the plant food in the unmixed fertilizer, at retail. It is usually smaller than the price at which the mixed fertilizer is sold, but since it is an average, it may be

greater than the prices of some of the unmixed fertilizer materials. The selling price includes cost of mixing, bags, transportation, the profit of the manufacturer if any and that of the dealer. The valuations are decided on about September 1, and the prices often change before the chief active fertilizer season, which is February to April in Texas. The valuation sums the value of the three plant foods shown in the analysis into a single figure, and is convenient for this purpose. The fertilizer law permits a deficiency of less than ten per cent in one plant food to be compensated by an excess of another, but if the valuation is four per cent less than the guaranteed valuation, a rebate must be paid to the purchaser. The valuation found compared with the valuation guaranteed shows whether or not the fertilizer as a whole is better or poorer than the guarantee as a whole. The following valuations were used in 1937-38:

	Cents per pound
Nitrogen .....	12.0
Available phosphoric acid .....	6.0
Total phosphoric acid in Thomas phosphate, tankage, and bone meal .....	4.0
Total phosphoric acid in rock phosphate .....	1.5
Potash .....	5.5

### Information on the Fertilizer Bag and Tag

A fertilizer tax tag is required to be placed on every bag of fertilizer before it is offered for sale or sold. The guaranteed analysis of the fertilizer is required by law to be printed on the bag or on the tag attached to the bag, so that the purchaser can see what he is buying. Total phosphoric acid may be guaranteed for bone or tankage instead of available phosphoric acid. A guarantee of total phosphoric acid is required in Thomas phosphate or rock phosphate. The information required on the package is as follows:

Net weight  
Name of fertilizer in full  
Name and address of manufacturer  
Guaranteed analysis:  
    Nitrogen, per cent  
    Available phosphoric acid, per cent  
    Potash, per cent

When a fertilizer is named by figures in this Bulletin, the first figure stands for the percentage of nitrogen, the second for the percentage of available phosphoric acid, and the third for the percentage of water-soluble potash. For example, a 4-8-4 fertilizer contains 4 per cent of nitrogen, 8 per cent of available phosphoric acid, and 4 per cent of potash.

### How to Calculate the Valuation

The valuation of a fertilizer is calculated by multiplying the composition by the valuation of each unit of plant food and adding the products. A unit is one per cent of a ton, or 20 pounds; so if the valuation of nitrogen

is 12 cents a pound, the valuation of a unit is  $12 \times 20 = \$2.40$ . The valuation of a unit of available phosphoric acid at 6.0 cents a pound would be  $6.0 \times 20 = \$1.20$ ; the valuation for a unit of potash at 5.5 cents a pound would be \$1.10. The following is an example of a calculation at the prices given above:

## Valuation of 4-8-4 fertilizer

Nitrogen .....	4 x \$2.40 =	\$9.60
Available phosphoric acid .....	8 x \$1.20 =	\$9.60
Potash .....	4 x \$1.10 =	\$4.40
Total valuation per ton .....		\$23.60

## Quantity Sold

The quantities of commercial fertilizers sold in Texas for several seasons, from September 1 to August 31, are given in Table 1. These are the actual sales as reported by the manufacturers, and not the tag sales. The tag sales are always a little larger than the actual sales. The sales in 1937-38 were about 5% less than the previous season. The largest sales so far made in Texas were during the season 1928-29. Fertilizer statistics for a number of years to August 31, 1926, have been published in Bulletin 350.

Table 1. Fertilizers sold in Texas, (not including cottonseed meal sold as feed but used as fertilizer).

	Tons
1905-06.....	13,500
1910-11.....	52,985
1913-14.....	77,400
1914-15.....	17,500
1918-19.....	46,000
1919-20.....	56,700
1920-21.....	14,850
1921-22.....	33,000
1922-23.....	73,300
1923-24.....	126,179
1924-25.....	97,719
1925-26.....	121,747
1926-27.....	79,863
1927-28.....	139,126
1928-29.....	187,215
1930-31.....	64,424
1932-33.....	30,843
1933-34.....	47,204
1934-35.....	59,480
1935-36.....	60,016
1936-37.....	84,936
1937-38.....	79,640



Table 2. Fertilizer sales by grades in order of tonnage for 1937-38.

	1937-38 In tons	1936-37 In tons	1935-36 In tons	1934-35 In tons
4-8-4 .....	18,743	23,702	12,118	10,682
4-12-4 .....	10,345	12,433	8,698	9,325
4-8-6 .....	8,107	8,758	6,995	8,384
6-10-7 .....	4,901	4,671	5,109	6,009
6-8-4 .....	4,597	2,920	0	0
6-12-6 .....	3,643	3,664	4,029	4,766
Superphosphate, 18% .....	3,516	2,743	3,408	3,249
Superphosphate, 20% .....	3,377	2,642	2,517	1,416
3-10-3 .....	2,961	4,150	3,500	3,450
Sulphate of ammonia .....	2,548	1,610	1,588	1,139
4-10-0 .....	2,137	2,132	2,040	1,003
16-20-0 .....	1,606	1,637	692	570
5-15-5 .....	1,525	1,133	923	1,420
11-48-0 .....	1,585	1,361	773	670
Bone meal .....	1,342	1,095	1,283	1,232
6-9-3 .....	1,055	1,221	751	598
Nitrate of soda, 15% and 16% .....	1,048	1,314	1,080	1,146
Lawn and garden fertilizer .....	957	157	131	183
Cyanamid .....	919	1,475	569	507
3-10-0 .....	826	1,220	696	.....
4-8-10 .....	678	589	297	301
Superphosphate, 32% .....	678	538	328	.....
4-10-7 .....	591	814	649	681
10-20-10 .....	311	246	245	314
0-12-4 .....	247	94	115	29
Muriate of potash, 50% .....	207	142	151	122
5-15-0 .....	216	236	67	300
Kainit, 20% .....	179	195	222	196
Cottonseed meal .....	158	25	100	73
Superphosphate, 45% .....	150	65	93	35
Tankage, bat guano, and activated sludge .....	134	295	305	679
10-10-0 .....	110	91	57	169
10-0-10 .....	106	108	108	72
Sulphate of potash, 48% .....	44	169	14	10
Soft phosphate with colloidal clay .....	40	138	27	65
Sheep manure .....	16	0	0	0
10-20-0 .....	14	0	0	0
Basic slag .....	10	0	10	22
Magnesium sulphate .....	5	0	0	0
Manure salts, 30% .....	5	9	9	0
6-30-0 .....	3	0	0	0
0-15-6 .....	0	54	54	34
Calcium nitrate .....	0	0	30	20
9-18-18 .....	0	952	41	76
9-27-9 .....	0	118	49	43
Miscellaneous unmixed fertilizer .....	0	17	0	94
8-24-8 .....	0	0	77	134
6-18-6 .....	0	0	44	172
Kainit, 14% .....	0	0	0	80
Total .....	79,640	84,938	60,016	59,470

### Quantity of Sales by Grades

Table 2 contains the sales of fertilizer by grades for four seasons arranged in order according to sales in the season 1937-38. Sales of 4-8-4 fertilizer are highest of all in 1937-38, as in 1936-37. The 4-12-4 comes second, the 4-8-6 comes third and the 6-10-7 comes fourth.

### Quantity of Cottonseed Meal Used as a Fertilizer

The tonnage of cottonseed meal reported in Table 2 includes only that tagged with fertilizer tax tags and sold as a fertilizer.

Table 3. Average composition, valuation and selling prices of grades of fertilizer, 1937-38.

Grades	Number averaged	Nitrogen per cent	Available Phos. Acid per cent	Potash per cent	Guaranteed Valuation per ton	Valuation found per ton	Selling price per ton
0-12-4.....	3	.....	14.04	4.43	18.80	21.72	\$24.77
3-10-0.....	5	2.78	10.95	.....	19.20	19.81	25.60
3-10-3.....	81	3.18	10.14	3.24	22.50	23.37	28.82
4-8-4.....	242	4.09	8.19	4.07	23.60	24.12	29.69
4-8-6.....	161	4.15	8.30	5.98	25.80	26.51	32.03
4-8-10.....	12	4.05	8.39	9.72	30.20	30.49	34.46
4-10-0.....	21	4.17	9.99	.....	21.60	21.99	28.53
4-10-7.....	10	4.26	10.36	7.26	29.30	30.66	34.41
4-12-4.....	197	4.15	11.97	4.18	28.40	28.91	33.82
5-15-0.....	1	5.41	18.65	.....	30.00	35.36	39.00
5-15-5.....	13	5.10	14.57	5.03	35.50	35.27	39.22
6-8-4.....	47	5.95	8.20	4.08	28.40	28.60	33.94
6-9-3.....	20	6.01	9.13	3.33	28.50	29.04	33.55
6-10-7.....	87	6.07	10.12	6.88	34.10	34.27	37.73
6-12-6.....	62	6.09	12.06	6.13	35.40	35.85	37.69
10-0-10.....	3	10.15	.....	9.92	35.00	35.26	39.50
10-6-4.....	1	10.68	5.87	4.15	35.60	37.24	55.00
10-10-0.....	1	9.54	10.39	.....	36.00	35.87	39.50
10-20-10.....	5	10.02	19.55	10.39	59.00	58.94	59.02
11-48-0.....	4	11.49	46.28	.....	84.00	83.11	61.00
16-20-0.....	3	16.20	21.10	.....	62.40	64.20	52.00
Ammonium Sulphate.....	7	20.86	.....	.....	49.92	50.05	46.19
Kainit 20%.....	4	.....	.....	19.69	22.00	21.66	28.58
30% Manure Salts.....	1	.....	.....	33.65	33.00	37.02	35.00
Muriate of Potash 50%.....	1	.....	.....	48.34	55.00	53.17	50.00
Nitrate of Soda 16%.....	7	16.34	.....	.....	38.40	39.21	43.67
Raw Bone Meal.....	11	4.14	22.39*	.....	26.48	27.84	36.52
Sulphate of Ammonia 20%.....	7	20.05	.....	.....	48.00	48.13	42.52
18% Superphosphate.....	17	.....	18.56	.....	21.60	22.27	24.40
20% Superphosphate.....	16	.....	20.38	.....	24.00	24.46	25.68
32% Superphosphate.....	3	.....	32.54	.....	38.40	39.05	37.83
Soft Phosphate with Colloidal Clay.....	1	.....	23.75*	.....	6.60	7.15	14.00
21% Cyanamid.....	1	20.90	.....	.....	50.40	50.16	33.50
Powdered Raw Bone.....	1	3.90	17.14	.....	23.20	23.07	40.00
Pulverized Sheep Manure.....	2	1.97	1.93	2.91	8.20	10.21	45.00
Tankage.....	1	4.67	20.16	.....	23.68	27.34	40.00

\*Total Phosphoric Acid.

## Composition and Selling Prices of Different Grades of Fertilizer

Table 3 contains the average composition, the guaranteed valuation, the valuation found by analysis, and the average retail selling prices per ton, of various grades of fertilizers. The average retail selling price is the average of the cash retail prices furnished to the fertilizer inspector by the dealers. The prices of the same fertilizer may be different in different towns on account of differences in cost of transportation or for other causes. The retail price includes handling costs, carrying charges, and the dealer's profits, as well as the cost of the plant food used in the materials for which the fertilizer is made.

The average valuations found (Table 3) exceeds the valuations guaranteed in almost every case. The exceptions are 5-15-5, 10-10-0, 10-20-10, 11-48-0, 21% cyanamid, kainit, muriate of potash and powdered raw bone. In all of these, however, the valuations found are only slightly below the valuations guaranteed.

### Cost of Plant Food

**Table 4.** Approximate average cost of plant food in cents per pound arranged in order of increasing cost, 1937-38.

Grade	Nitrogen	Available Phosphoric Acid	Potash
21% Cyanamid.....	7.98		
11-48-0.....	8.71	4.36	
16-20-0.....	10.00	5.30	
Sulphate of Ammonia 20%.....	10.63		
Muriate of Potash.....			5.00
Ammonium Sulphate.....	11.10		
32% Superphosphate.....		5.91	
10-20-10.....	12.00	6.00	5.50
30% Manure Salts.....			5.84
6-12-6.....	12.78	6.39	5.86
20% Superphosphate.....		6.42	
10-10-0.....	13.16	6.58	
5-15-5.....	13.26	6.63	6.08
6-10-7.....	13.27	6.64	6.08
10-0-10.....	13.55		6.21
18% Superphosphate.....		6.78	
Nitrate of Soda.....	13.64		
4-8-10.....	13.69	6.85	6.28
4-10-7.....	14.09	7.04	6.46
6-9-3.....	14.12	7.06	6.47
4-12-4.....	14.29	7.15	6.55
6-8-4.....	14.34	7.17	6.57
4-8-6.....	14.89	7.45	6.83
4-8-4.....	15.10	7.55	6.92
3-10-3.....	15.37	7.69	7.05
Kainit, 20%.....			7.15
5-15-0.....	15.60	7.80	
0-12-4.....		7.91	7.25
4-10-0.....	15.85	7.93	
3-10-0.....	16.00	8.00	
Raw Bone Meal.....	16.55	5.52*	
10-6-4.....	18.54	9.27	8.50
Tankage.....	20.27	6.76*	
Powdered Raw Bone.....	20.69	6.90*	
Soft Phosphate with Colloidal Clay.....		3.18*	
Pulverized Sheep Manure.....	65.86	32.93	30.18

\*Total Phosphoric Acid

Table 4 contains the retail cost of a pound of nitrogen, of available phosphoric acid, and of potash, in cents per pound, as calculated from the cash selling prices per ton given in Table 3 and the guaranteed composition. For the purpose of this calculation it was assumed that the prices were in the same ratio as the valuations. As the prices of the same fertilizer in different places vary, those figures are not correct for any particular locality, but represent averages only, and are for purposes of comparison. The prices were collected by the inspectors from retail merchants handling fertilizer. Grades used extensively near the factories would average a lower price than those used at a distance on account of lower transportation costs. The fertilizers with the lowest prices of plant food are given first in the table.

**Cost of nitrogen.** The 21% cyanamid was the cheapest source of nitrogen, 11-48-0 was next, 16-20-0 third, and sulphate of ammonia came fourth. Excluding the fertilizer in small packages for home use, pulverized sheep manure was the most expensive source of nitrogen, raw bone meal next,

followed by tankage and 10-6-4 fertilizer. Nitrogen in nitrate of soda 16% cost about 13.64 cents a pound compared with 10.63 cents a pound for that in sulphate of ammonia. Nitrogen cost more in most of the mixed fertilizers than in sulphate of ammonia or cyanamid because it costs to mix the fertilizers. The lowest-priced nitrogen in the mixed fertilizer was in the 11-48-0, followed in order by the 16-20-0, 10-20-10 and 6-12-6. Nitrogen was lower in price than last season in some fertilizers and higher in others. The difference averaged .31 cents a pound more for nitrogen in sulphate of ammonia, .88 cents more for nitrogen in 16% nitrate of soda, .13 cents less for that in 3-10-3, and .10 cents less for that in 4-12-4.

**Cost of phosphoric acid.** The cheapest source of phosphoric acid was 11-48-0, then 16-20-0, followed by 32% superphosphate, and 10-20-10. The cost of available phosphoric acid was about .36 cents less per pound in 20 per cent superphosphate than in 18 per cent. Omitting the household fertilizers, phosphoric acid was most expensive in pulverized sheep manure, then in 10-6-4, then 3-10-0, and then 4-10-0. Available phosphoric acid was .10 cents a pound lower in 4-12-4 than it was last season, and .13 cents a pound lower in 3-10-3, than last year.

**Cost of Potash.** Muriate of potash was the cheapest form of potash, followed by 10-20-10 and pulverized sheep manure the most expensive in mixed fertilizers, followed by 10-6-4. Potash cost .35 cents a pound more in muriate of potash, than it did last season, but .06 cents a pound less in 3-10-3, and .05 cents a pound less in 4-12-4.

### Relation of Cost to Concentration of Fertilizers

Certain fertilizers are sold which contain the plant food in the same ratio so that, so far as nitrogen, phosphoric acid and potash are concerned, they are the same fertilizer except in concentration, or strength.

**Table 5. Relative cost of approximately the same amount of plant food in different grades of fertilizer.**

Grade	Nitrogen pounds	Available phosphoric acid pounds	Potash pounds	Cost
Group 1				
1.0 ton 5-15-5.....	100	300	100	\$39.22
1.25 tons 4-12-4.....	100	300	100	41.27
1.67 tons 3-10-3.....	100	333	100	48.13
Group 2				
1.0 ton 6-12-6.....	120	240	120	37.69
1.5 tons 4-8-4.....	120	240	120	44.54

The ratio of plant food in the 4-12-4 and 5-15-5 fertilizers is exactly the same, as the proportions are three parts phosphoric acid to one of nitrogen and one of potash. The 3-10-3 fertilizer has practically the ratio 1-3-1. Table 5 shows the approximate cost of nearly equal quantities of plant food in these fertilizers at the average prices given in Table 3. The plant food in 1.25 tons of 4-12-4 cost \$2.05 more than an equal quantity in 5-15-5. The 1.67 tons of 3-10-3 cost \$8.91 more than the 1.0 tons of 5-15-5, but when allowance of \$2.12 is made of the 33 pounds more phosphoric acid it contains, the plant food in 3-10-3 costs \$6.79 more. Similar differences are to be seen with the other grades. The most concentrated mixed fertilizer was the cheapest per pound of plant food, or to put it another way, the highest-priced fertilizer per ton may be the lowest priced per pound of plant food. This difference is caused partly by freight charges, partly by the cost of bagging, etc. The higher cost of manufacture of the more concentrated fertilizers is frequently more than offset by the cost of freight, bags, etc. The cost of phosphoric acid averaged slightly less in 20 per cent superphosphate than in 18 per cent. (Table 4).

### Comparing Cost of Fertilizer

The relative money value of two or more kinds of fertilizer may be roughly compared by dividing the price at which the fertilizer is sold per ton by the valuation per ton of the fertilizer. Guaranteed valuations for many grades for the season of 1937-38 are given in Table 3, and while the valuations for 1938-39 may be somewhat different, these calculations may be used for comparative purposes. For example, if a 4-8-4 fertilizer sells for \$34.00 a ton and a 6-12-6 fertilizer for \$38.00, which is cheaper? Using the valuations from Table 3, for 4-8-4, the selling price \$34.00 divided by the valuation \$23.60 gives \$1.44; for 6-12-6, the selling price \$38.00 divided by the valuation \$35.40 gives \$1.07. Thus one dollar of valuation costs \$1.44 in 4-8-4, and \$1.07 in 6-12-6. Therefore, the 6-12-6 is cheaper. Similar calculations may be made for other grades and for other prices.

Of course the suitability of the fertilizer to the soil and crop must be considered in addition to the relative cost of the plant food.

### Fertilizer Analyses to be Sold in 1938-39

The grades of fertilizer sold in Texas are limited in number. This standardization aids the farmer to become familiar with the different kinds of fertilizer, enables him to decide more readily on the proper kind to be used, enables the agricultural worker to make definite recommendations, and reduces the cost of manufacture and handling, thereby also reducing the cost to the consumer. At a conference with fertilizer manufacturers doing business in Texas, Louisiana, and Arkansas in July 1938, grades of mixed fertilizers were adopted for these states. This was the



fourteenth such conference for Texas manufacturers, and the sixth joint conference.

The following grades were adopted for Texas for 1938-39:

0-12-4	4-12-4	6-30-0
3-10-0	5-15-0	10-0-10
3-10-3	5-15-5	10-10-0
4-8-4	6-8-4	10-20-0
4-8-6	6-8-8	10-20-10
4-8-10	6-9-3	11-48-0
4-10-0	6-10-7	15-30-15
4-10-7	6-12-6	16-20-0

#### MATERIALS

Activated sludge	Muriate of potash, 50%
Bat guano	Nitrate of soda, 16%
Basic slag	Nitrate of soda and potash, 14-0-14
Bone meal	Sheep manure
Calcium nitrate	Sulphate of ammonia, 20%
Cal-Nitro, 16%	Sulphate of potash, 48%
Cal-Nitro, 20%	Superphosphate, 18%
Cottonseed meal	Superphosphate, 20%
Cyanamid, 21%	Superphosphate, 32%
Cyanamid, 22%	Superphosphate, 45%
Ground phosphate rock	Soft phosphate with colloidal clay
Kainit, 20%	Tankage
Lawn and Garden	
Manure salts, 30%	

#### Free Analyses

Purchasers of commercial fertilizers for their own use (but not for sale), can secure a free analysis of a sample. Those who desire the free analysis of a sample of commercial fertilizer should write for a blank, "Application for Free Fertilizer Analysis," to the State Chemist, College Station, Texas, before taking a sample. The proper sampling of a fertilizer requires care and the law requires it to be taken in a certain way so that a fair sample is taken. If the sample is not properly taken, it does not represent the fertilizer sampled, and the analysis may be better or poorer than the goods actually are. This privilege of a free analysis applies only to fertilizers tagged, and sold under the fertilizer law and to samples properly taken so that they represent the goods sampled.

#### Analysis of Fertilizers, 1937-38

Samples of fertilizer were collected from the grades being sold in many towns and cities. The chief places of sales were visited several times. The number of samples registered for analysis was 1,064.

Table 7, near the end of this Bulletin, contains a list of the samples of fertilizer subjected to analysis in the season ending September 1, 1938. Analyses below guarantee are brought out in heavy type. Practically all

samples of fertilizer were collected by our inspectors. Analyses and inspection were made by S. E. Asbury, T. L. Ogier, Waldo Walker, C. D. Marrs, Geo. P. Smith, P. Blickensdorfer, Sam Greenberg, and Russell Smith.

Table 6. Average valuation of all fertilizers guaranteed and found in dollars per ton, 1937-38

Manufacturer	Number averaged	Valuation per ton		No. of samples more than 4% below guarantee
		Guaranteed	Found	
American Cyanamid Company.....	8	\$57.30	\$58.29	0
Arkansas Fertilizer Company.....	7	25.07	26.07	0
Armour Fertilizer Works.....	86	29.91	30.37	4
The Barrett Company.....	1	38.40	38.93	0
Bryan Cotton Oil & Fertilizer Co.....	12	26.56	26.47	1
Campbell Fertilizer Company.....	32	25.67	29.07	0
Chilean Nitrate Sales Corporation.....	5	38.40	39.22	0
Consolidated Chemical Industries, Inc.	8	26.07	27.24	0
David Hardie Seed Company.....	1	28.40	29.30	0
The Davidson Chemical Corporation.....	2	22.60	23.87	0
Dixie Chemical Company.....	4	25.08	26.33	0
East Texas Cotton Oil Company.....	33	26.72	26.99	1
Farmers Cotton Oil Company.....	8	27.55	26.60	3
Federal Chemical Company, Inc.....	77	26.87	26.85	1
Fidelity Chemical Corporation.....	81	29.67	30.50	0
Ford Motor Company.....	6	49.92	50.26	0
Gilmer Cotton Oil & Fertilizer Co.....	11	27.54	27.62	0
Houston Packing Company.....	3	24.86	28.79	0
International Agricultural Corp.....	40	25.92	26.18	0
Jacksonville Fertilizer Company.....	9	27.84	30.41	0
Kelly-Weber & Company.....	20	23.71	23.46	1
Lockey's Gin Service.....	1	25.80	25.44	0
Longview Cotton Oil Company.....	8	30.33	30.92	0
Marshall Cotton Oil Company.....	18	25.96	26.30	1
Mixon Bros. ....	9	30.79	31.43	0
Nicholson Seed Store.....	2	32.00	33.15	0
Oil Mill & Fertilizer Works.....	17	27.18	27.60	1
Palestine Oil Mill & Fertilizer Works	37	26.89	27.20	0
Pate Bros. Fertilizer Works.....	23	26.85	28.10	0
Pittsburg Cotton Oil Company				
Fertilizer Works.....	15	25.37	25.86	1
M. R. Porter Company.....	1	6.60	7.15	0
Port Fertilizer Company.....	1	35.50	34.92	0
The Pulverized Manure Company.....	2	8.20	10.24	0
San Benito Feed Company.....	1	25.80	33.36	0
L. W. Shaffer Company.....	2	25.80	27.90	0
Shreveport Fertilizer Works.....	76	26.49	27.53	3
Swift & Company Fertilizer Works....	114	28.94	29.01	2
Temple Cotton Oil Company.....	17	25.49	24.91	2
Texas Farm Products Company.....	70	27.53	27.68	3
Thos. Self .....	11	26.95	26.93	0
Tri-State Fertilizer & Lumber Company	14	25.51	28.36	0
Tyler Fertilizer Company.....	9	29.54	29.07	3
United Chemical Company.....	84	26.57	27.09	1
Virginia-Carolina Chemical Corp.....	73	27.52	28.16	1

#### Relation of Valuation Guaranteed to Valuation Delivered

Table 6 contains the average guaranteed valuation, and the average valuation found by our analyses, for all manufacturers doing business in Texas. In the preparation of this table, all analyses made were averaged, even though several were made of each brand, and fertilizer materials are included as well as mixed fertilizers.

### Average Below Guarantee

Whenever any lot of fertilizer is 4 per cent or more below guarantee, the law requires all persons who have sold this lot of fertilizer to make good the deficiency to all purchasers. This rebate is paid by the manufacturer to the dealer and by the dealer to the customer. The number of lots on which rebates were paid by each manufacturer is shown in Table 6.

### Non-Acid Forming Fertilizers

Ordinary fertilizers are acid forming, and when used for a number of years on soils with a low buffer capacity may make a soil acid, or more acid, if it was already acid to start with. Non-acid forming fertilizers are made by the use of proper amounts of ground dolomite, which is calcium and magnesium carbonate, or by the selection of suitable fertilizing ingredients. Limestone is not suitable because it reverts the available phosphoric acid and causes it to become insoluble. In the Eastern part of the United States, where fertilizers have been used for a long time and where the soils are already acid, ordinary fertilizers may not give as good results in crop yields as non-acid forming fertilizers. Non-acid forming fertilizers are recommended for use on acid soils which are likely to become still more acid with ordinary fertilizers. Since Texas soils are generally only slightly acid, or even alkaline, the use of non-acid forming fertilizers is not at present necessary, except under exceptional condi-

Table 6A. Analyses of fertilizers claimed to be non-acid forming.

Laboratory Number	Name of Brand	Acid-Base Balance	Character
52424	Swift's pH7 6-8-4.....	11A	Passed
52435	Swift's pH7 6-8-4.....	5A	Passed
52452	Swift's pH7 6-8-4.....	71A	Slightly acid-forming
52461	Swift's pH7 6-8-4.....	12A	Passed
52468	Swift's pH7 6-8-4.....	18A	Passed
52493	Swift's pH7 6-8-4.....	61A	Slightly acid-forming
52533	Swift's pH7 6-8-4.....	23B	Passed
52576	Swift's pH7 6-8-4.....	65A	Slightly acid-forming
52583	Swift's pH7 6-8-4.....	26B	Passed
52607	Swift's pH7 6-8-4.....	8A	Passed
52628	Swift's pH7 6-8-4.....	21A	Passed
52674	Swift's pH7 6-8-4.....	28B	Passed
52696	Swift's pH7 6-8-4.....	42A	Passed
52708	Swift's pH7 6-8-4.....	11A	Passed
52834	Swift's pH7 6-8-4.....	22A	Passed
52852	Swift's pH7 6-8-4.....	74A	Slightly acid-forming
52914	Swift's pH7 6-8-4.....	71A	Slightly acid-forming
52922	Swift's pH7 6-8-4.....	29A	Passed
52947	Swift's pH7 6-8-4.....	8A	Passed
53024	Swift's pH7 6-8-4.....	11A	Passed
53066	Swift's pH7 6-8-4.....	1A	Passed
53093	Swift's pH7 6-8-4.....	32A	Passed
53135	Swift's pH7 6-8-4.....	9A	Passed
53151	Swift's pH7 6-8-4.....	17A	Passed
53257	Swift's pH7 6-8-4.....	22B	Passed
53293	Swift's pH7 6-8-4.....	5A	Passed
53412	Swift's pH7 6-8-4.....	12A	Passed

tions. Where the soils are neutral or slightly alkaline, as is the case in large areas of limestone soils, ordinary fertilizers are preferable to non-acid forming fertilizers. An acid-forming fertilizer may be better on an alkaline soil than a non-acid forming fertilizer. Only one brand of fertilizer sold in Texas this season was claimed to be non-acid forming. Examination was made of 27 samples, with the results given in Table 6A. Five of the 27 samples were slightly acid-forming.

## INVESTIGATIONS UNDER THE FERTILIZER LAW

The State Chemist is required by the fertilizer law to investigate the composition, properties, and agricultural values of fertilizers or fertilizer materials, or ingredients of fertilizer sold or offered for sale within the State of Texas, and to publish his results as he may find.

### Relation to Experiment Station Work

The work of the State Chemist is closely related to the chemical work of the Experiment Station. In his capacity as Chief of the Division of Chemistry of the Experiment Station, the State Chemist is carrying out extensive investigations into the fundamental properties of soils, especially with respect to their content of plant food. This work is related closely to the use of fertilizers and is connected with investigations as to the agricultural values of fertilizers required by the Fertilizer Control, for fertilizers vary in effect upon the different soils.

### Soft Phosphate With Colloidal Clay

Soft phosphate with colloidal clay is a natural phosphate of lime containing 20 per cent of total phosphoric acid or more. The phosphate of lime is so finely divided that some of it is termed colloidal. The availability to plants of the phosphoric acid of soft phosphate with colloidal clay is on an average about 40 per cent of that of the available phosphoric acid in 20 per cent superphosphate. For further details, see Bulletin No. 509.

### Sulphur, Gypsum, Manganese, and Other Secondary Fertilizing Elements

We are unable to recommend the use of sulphur or gypsum as a fertilizer in Texas. The experiments which have been carried out do not give results which justify the use of such materials as fertilizers (see Bulletins 408 and 414). This also applies to the natural mixture of sulphur, gypsum, sulphuric acid and other substances, which various parties and concerns have attempted to sell or exploit as a fertilizer or soil amendment. It is not recommended for use as a fertilizer and does not give results on soils which need fertilizer, as shown in Bulletins 408 and 414.

Sulphur is sometimes used to acidify soils that are alkaline or neutral when the plants being grown do best on an acid soil. The organisms in the

soil oxidize the sulphur to sulphuric acid and thus in turn acidifies the soil. The oxidation requires two or three months. The quantity to be used depends upon the buffer capacity of the soil for acid, and may range from a few hundred pounds to several thousand pounds per acre. In the latter case, acidification of spots is best. The value of a sulphur for acidifying the soil depends on the quantity of sulphur present; a material containing 85 per cent of sulphur is  $4\frac{1}{4}$  times as strong as one containing only 20 per cent of sulphur. There are also limestone soils in Texas, on which plants suffer from a yellowing of the leaves, known as chlorosis, usually due to deficiency of iron. The presence of carbonate of lime prevents the plant from taking up (or utilizing) sufficient iron. Most of these soils contain such large quantities of carbonate of lime that broadcast applications of sulphur are soon neutralized. A sufficient number of acidified spots may prevent the chlorosis. The acidified spots may be made by digging holes to depths of 2 to 3 feet, mixing the dirt with sulphur and returning the mixture to the holes.

Investigations on the use of manganese sulphate for Texas soils are given in Bulletin 432. The results of the experimental work do not justify recommendation of the use of manganese sulphate on Texas soils.

The general use of copper, iodine, zinc, boron, magnesia, and other secondary fertilizing elements is not recommended for Texas. There are exceptional cases where iron may be needed.

### Greensand

A report of investigations regarding the value of greensand as a fertilizer was published in Bulletin 428. The availability of the potash and phosphoric acid in greensand was found to be low. Greensand has little fertilizing value but can be used in quantities of 5 to 40 tons to an acre on land near to the deposits where it can be mined and applied at a cost closely related to its value. It does not contain sufficient fertilizer value to justify attempting to market it.

### Polyhalite and Sewage Sludge

Polyhalite, a mineral found in deep deposits in western Texas and in New Mexico, contains about 12 per cent potash, which is only partly soluble in water, but which is readily available to plants (see Bulletin 449).

Digested sewage sludge is low in plant food, and the nitrogen has a low availability. Dried activated sludge contains about 5 per cent nitrogen and 2 per cent available phosphoric acid and the nitrogen has a good availability to plants (see Bulletin 445).

### Information Regarding the Use of Fertilizers

Information regarding the use of fertilizers is given in Bulletin 553, which will be sent free on application.



## DEFINITIONS OF FERTILIZER TERMS

The Association of Official Agricultural Chemists has adopted a number of definitions of terms and interpretations of results for fertilizers and liming materials. The committee appointed for that purpose considers the proposed definitions and interpretations for three or more years and three or more public hearings held on them before a definition or interpretation is finally adopted. There has therefore been opportunity for careful consideration, and for the trade to recommend changes or improvements before final adoption. The definitions are published in the book *Methods of Analysis—A.O.A.C.*, are supplemented by those adopted later and printed in the *Journal of the A.O.A.C.*

The definitions adopted up to date are as follows:

An **acid-forming fertilizer** is one that is capable of increasing the residual acidity of the soil.

A **non-acid forming fertilizer** is one that is not capable of increasing the residual acidity of the soil.

**Acidulated fish tankage** is the rendered product derived from fish and treated with sulfuric acid.

**Activated sewage products** are made from sewage freed from grit and coarse solids and aerated after being inoculated with microorganisms. The resulting flocculated organic matter is withdrawn from the tanks, filtered with or without the aid of coagulants, dried, ground, and screened.

**Ammoniated superphosphate** is a product containing superphosphate and/or dissolved bone and nitrogenous compounds, but without the addition of potash.

**Analysis**, as applied to fertilizers, designates the percentage composition of the product expressed in terms of nitrogen, phosphoric acid, and potash in their various forms.

**Ashes from leached wood** are unleached ashes resulting from the burning of wood that has been exposed to or digested in water or other liquid solvent, as in the extraction of dyes, so that a part of the plant food has been dissolved and removed.

**Leached wood ashes** are ashes from burned unleached wood with part of their plant food removed by artificial means or by exposure to rains, snows, or other solvent.

**Unleached wood ashes** are ashes from burned unleached wood that have had no part of their plant food removed and that contain four per cent (4%) or more of water-insoluble potash ( $K_2O$ ).

**Available phosphoric acid** is the sum of the water-soluble and the citrate-soluble phosphoric acid.

**"Basic" lime phosphate** is a superphosphate to which liming materials have been added in a quantity at least six per cent (6%) calcium carbonate equivalents in excess of the quantity required to convert all water-soluble phosphate to the citrate-soluble form.

**Basic phosphate slag** is a by-product in the manufacture of steel from phosphatic iron ores. The product shall be finely ground and shall con-

tain no admixture of materials, other than what results in the original process of manufacture. It shall contain not less than twelve per cent (12%) of total phosphoric acid ( $P_2O_5$ ), not less than eighty per cent (80%) of which shall be soluble in two per cent (2%) citric acid solution according to the Wagner Method of analysis. Any other phosphate slag not conforming to this definition shall be designated low grade.

**Finely ground** in the definition of basic phosphate slag shall refer to actual size of particles as determined by the use of standard sieves, as follows: Seventy per cent (70%) or more shall pass a 100-mesh, and ninety per cent (90%) or more shall pass a 50-mesh sieve.

A **brand** is a term, design, or trade mark used in connection with one or several grades of fertilizers.

A **brand name** is a specific designation applied to an individual fertilizer.

The **analysis or grade** of a fertilizer should be included with its brand name, and so used by the manufacturer on sacks and in printed literature and by the control official in his reports and publications.

The **order of terms in mixed fertilizers** shall be nitrogen first, phosphoric acid second, and potash third.

When the name of a material is used as a part of the brand name of a mixed fertilizer, as for example blood, bone or fish, the nitrogen or phosphoric acid shall be derived from or supplied entirely by the material named. When the name of a material is used as a brand or as part of a brand and the nitrogen and phosphoric acid is not supplied by the material named, the word "brand" shall follow the name of the material. Example: "Fish Brand Fertilizer."

**Dissolved bone** is ground bone or bone meal that has been treated with sulfuric acid.

**Ground raw bone** is dried ground animal bones that have not been previously steamed under pressure.

**Ground steamed bone** is ground animal bones that have been previously steamed under pressure.

**Dried blood** is the collected blood of slaughtered animals, dried and ground and containing not less than twelve per cent (12%) of nitrogen in organic forms.

**Charred peat** is peat artificially dried at a temperature that causes partial decomposition.

**Cyanamid** is a commercial product composed chiefly of calcium cyanamid ( $CaCN_2$ ), and it shall contain not less than twenty-one (21%) per cent of nitrogen.

The **nitrogen in calcium cyanamid** shall be considered as being of organic nature.

**Dicalcium phosphate** is a manufactured product consisting chiefly of a dicalcic salt of phosphoric acid.

**Fertilizer grade** shall represent only the minimum guarantee of its plant food expressed in terms of nitrogen (not ammonia), available phosphoric acid, and water-soluble potash.

The statement of **guarantee** of mixed fertilizers shall be given in whole numbers.

A **fertilizer formula** shall express the quantity and grade of the crude stock materials used in making a fertilizer mixture. For example: 800 pounds of 16 per cent superphosphate, 800 pounds of tankage (7.40 nitrogen and 9.15 total phosphoric acid), and 400 pounds of sulphate of potash-magnesia (twenty-six per cent (26%), potash).

**Fish tankage**, fish scrap, dry ground fish, fish meal fertilizer grade is the dried ground product derived from rendered or unrendered fish.

**Gypsum, land plaster or crude calcium sulfate** are products consisting chiefly of calcium sulfate. They may contain twenty per cent (20%) of combined water. (They do not neutralize acid soils.)

**Hoof and horn meal** is processed, dried, and ground hoofs and horns.

**Kainit** is a potash salt containing potassium and sodium chlorides and sometimes sulfate of magnesia with not less than twelve per cent (12%) of potash ( $K_2O$ ).

The word **lime** when applied to liming materials means either calcium oxide or calcium and magnesium oxides.

**Hydrated or slaked lime** is a dry product consisting chiefly of the hydroxide of calcium and oxide-hydroxide of magnesium.

**Air-slaked lime** is the product composed of various proportions of the oxide, hydroxide and carbonate of calcium or of calcium and magnesium, and derived from exposure of quick lime.

**Quicklime, burned lime, caustic lime, lump lime, unslaked lime** shall apply to calcined materials, the major part of which is calcium oxide in natural association with a lesser amount of magnesium oxide, and which is capable of slaking with water.

**Waste lime, by-product lime**, is any industrial waste or by-product containing calcium or calcium and magnesium in forms that will neutralize acids. It may be designated by the prefixation of the name of the industry or process by which it is produced, i.e., gas-house lime, tanners' lime, acetylene lime-waste, lime-kiln ashes, calcium silicate, etc.

**Pulverized limestone** (fine ground limestone) is the product obtained by grinding either calcareous or dolomitic limestone so that all the material will pass a 20-mesh sieve and at least seventy-five (75%) per cent will pass a 100-mesh sieve.

**Ground limestone** (coarse ground limestone) is the product obtained by grinding either calcareous or dolomitic limestone, so that all the material will pass a 10-mesh sieve, and at least fifty per cent (50%) will pass a 100-mesh sieve.

**Ground shells** is the product obtained by grinding the shells of mollusks so that not less than fifty per cent (50%) shall pass a 100-mesh sieve. The product shall also carry the name of the mollusks from which said product is made.

The term "**lime**" shall not be used in the registration, labeling, or guaranteeing of fertilizers or fertilizer materials unless the lime is in a

form to neutralize soil acidity (the oxide, hydroxide or carbonate, or equivalent magnesia compounds).

**Agricultural liming materials** is a product whose calcium and magnesium content is capable of neutralizing soil acidity.

**High-calcic products** are materials in which 90 per cent or more of the total calcium and magnesium oxide content consists of calcium oxide.

**High-magnesic products** are materials in which more than 10 per cent of the total calcium and magnesium oxide content consists of magnesium oxide.

**Marl, ground shell marl** is the product obtained by grinding natural deposits of shell marl. Not less than seventy-five per cent (75%) shall pass a 100-mesh sieve.

The term **manganese sulfate** when connoting an ingredient of a mixed fertilizer, shall designate anhydrous manganous sulfate ( $\text{MnSO}_4$ ).

The **water soluble or available manganese** in fertilizer shall be expressed as manganese (Mn).

**Manure salts** are potash salts containing high percentages of chloride and from twenty per cent (20%) to thirty per cent (30%) of potash ( $\text{K}_2\text{O}$ ). The term double manure salts is discontinued.

**Mono-ammonium phosphate** (fertilizer grade) is a commercial salt made by combining phosphoric acid with ammonia. It shall contain not less than ten per cent (10%) of nitrogen and not less than forty-six (46%) of available phosphoric acid.

**Muriate of potash** (commercial potassium chloride) is a potash salt containing not less than forty-eight per cent (48%) of potash ( $\text{K}_2\text{O}$ ), chiefly as chloride.

**Dried, pulverized, or shredded manures** are what the name indicates, and not mixtures of manures and other materials.

**Sheep manure-wool waste** is the by-product from wool-carding establishments consisting chiefly of sheep manure, seeds, and wool fiber.

**Nitrate of potash** (commercial potassium nitrate) is a salt containing not less than twelve per cent (12%) of nitrogen and forty-four per cent (44%) of potash ( $\text{K}_2\text{O}$ ).

**Nitrate of soda** (commercial sodium nitrate) is commercial sodium nitrate containing not less than fifteen per cent (15%) of nitrogen, chiefly as sodium nitrate.

**Peat** is partly decayed vegetable matter of natural occurrence. It is composed chiefly of organic matter which contains some nitrogen of low activity.

**Phosphate rock** is a natural rock containing one or more calcium phosphate minerals of sufficient purity and quantity as to permit its use, either directly or after concentration, in the manufacture of commercial products.

**Precipitated bone phosphate** is a by-product from the manufacture of glue from bones and is obtained by neutralizing the hydrochloric acid solution of processed bone with calcium hydroxide. The phosphoric acid is chiefly present as dicalcium phosphate.

**Precipitated phosphate** is a product consisting mainly of dicalcium phosphate obtained by neutralizing with calcium hydroxide the acid solution of either phosphate rock or processed bone.

Products secured by heating calcium phosphate with alkali salts containing potash are **non-acid phosphates with potash**. They are not potassium phosphate.

**Soft phosphate with colloidal clay** is a very finely divided low-analysis by-product from mining Florida rock phosphate by a hydraulic process in which the colloidal material settles at points in artificial ponds and basins farthest from the washer, and is later removed after the natural evaporation of the water.

**Sulphate of ammonia** is a commercial product composed chiefly of ammonium sulfate. It shall contain not less than twenty and five-tenths per cent (20.5%) of nitrogen.

**Sulphate of potash** (commercial potassium sulfate) is a potash salt containing not less than forty-eight per cent (48%) of potash ( $K_2O$ ), chiefly as sulfate, and not more than two and one-half per cent (2.5%) of chlorine.

**Chlorine** is mixed fertilizers in which the potash is claimed as sulfate shall not exceed one-half of one per cent (0.5%) more than what is called for in the minimum potash content based on the definition for sulfate of potash formulated by the committee. Calculate as follows: 0.05 times the percentage of potash found plus 0.5.

The term **phosphoric acid** designates  $P_2O_5$ .

The term **potash** designates potassium oxide ( $K_2O$ ).

As the terms phosphoric acid and potash are used universally in guaranteeing and in reporting the analyses of fertilizers it is recommended that the same terms also be used in reporting and discussing the results of analyses of related materials.

**Sulfate of potash-magnesia** is a potash salt containing not less than twenty-five per cent (25%) of potash ( $K_2O$ ), nor not more than two and one-half per cent (2.5%) of chlorine.

**Superphosphate** is a cured mixture of rock phosphate and sulfuric acid and/or phosphoric acid. The grade shall always be used as a prefix to the name. Example: 16% Superphosphate. The use of the term Acid Phosphate is discontinued.

**Tankage** (without qualification) is the rendered, dried, and ground by-product, largely meat and bone from animals (slaughtered or that have died otherwise).

**Process tankages** are products made under steam pressure from crude inert nitrogenous materials, with or without the use of acids, for the purpose of increasing the activity of the nitrogen. These products shall be called "Process Tankages" with or without further qualification. The water-soluble nitrogen in these products shall test at least fifty per cent (50%) active by the alkaline, or eighty per cent (80%) by the neutral permanganate method.

**Garbage tankage** is the rendered, dried, and ground product derived from waste household food materials.



**Crude, inert, or slow-acting nitrogenous materials** are unprocessed organic substances relatively high in nitrogen but having a very low value as plant food and showing a low activity by both the alkaline and neutral permanganate methods (below fifty per cent (50%) and eighty per cent (80%) respectively).

**Activity of water-insoluble nitrogen in fertilizers.** The alkaline and neutral permanganate methods distinguish between the better and poorer sources of water-insoluble nitrogen; they do not show the percentage availability of the material. The available nitrogen of any product is measured only by carefully conducted vegetation experiments.

(a) The methods shall be used on mixed fertilizers containing water-insoluble nitrogen amounting to three-tenths of one per cent (0.3%) or more of the weight of the material. If a total nitrogen exceeds the minimum guarantee and is accompanied by a low activity of the insoluble nitrogen, the over-run shall be taken into consideration in determining the classification of the water-insoluble nitrogen.

(b) The water-insoluble nitrogen in mixed fertilizers showing an activity below fifty per cent (50%) by the alkaline method and also below eighty per cent (80%) by the neutral method shall be classed as inferior. This necessitates the use of both methods, also the provision as to over-run in (a), before classifying as inferior.

A unit of plant food is twenty (20) pounds, or one per cent (1%) of a ton.

### Summary

This Bulletin contains a report of the Texas Fertilizer Control for 1937-38. Explanations of terms are given.

Sales of fertilizer in Texas were 79,640 tons in 1937-38. They were 84,938 tons in 1936-37. The tonnage for other years is given. The tons reported do not include cottonseed meal sold as a feed but used as a fertilizer.

The average selling prices and composition of the different kinds of fertilizer are given.

Available phosphoric acid costs slightly less in 20 per cent superphosphate than in 18 per cent. Kainit is an expensive source of potash, muriate of potash being much cheaper.

Nitrogen costs much less in sulphate of ammonia than in nitrate of soda. Plant food costs less per pound in the more concentrated fertilizers than in less concentrated fertilizers, though the former costs more per ton.

The grades of fertilizer to be sold next season are given.

Analyses of 1,064 samples collected by the inspector are given.

A table is given showing the relation of the guaranteed valuation to the valuation delivered by the various manufacturers.

Definitions of fertilizer terms as adopted by Association of Official Agricultural Chemists are given.

Table 7. Analysis of commercial fertilizer, season 1937-38.

Laboratory Number	Manufacturer place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>American Cyanamid Company, New York, New York</b>				
52508	21% 'Aero' Cyanamid Granular Guarantee.....	21.00	.....	.....	\$50.40
	Analysis.....	20.90	.....	.....	50.16
52497	'Ammo-Phos' 11-48-0 High Analysis Fertilizer Guarantee.....	11.00	48.00	.....	84.00
52501	Analysis.....	11.17	48.17	.....	84.61
	Analysis.....	11.30	48.31	.....	85.09
52492	'Ammo-Phos' 16-20-0 High Analysis Fertilizer Guarantee.....	16.00	20.00	.....	62.40
52502	Analysis.....	16.05	21.17	.....	63.92
	Analysis.....	16.60	21.28	.....	65.38
52496	Granular 'Aero' 32% Super Phosphate Guarantee.....	.....	32.00	.....	38.40
52500	Analysis.....	.....	32.55	.....	39.06
52503	Analysis.....	.....	32.39	.....	38.87
	Analysis.....	.....	32.69	.....	39.23
	<b>Arkansas Fertilizer Company, Little Rock, Arkansas</b>				
52804	White Diamond Brand Fertilizer Crop Getter Guarantee.....	4.00	12.00	4.00	28.40
	Analysis.....	4.04	11.57	4.32	28.33
53470	White Diamond Brand Fertilizer Early Boll Guarantee.....	3.00	10.00	3.00	22.50
	Analysis.....	3.44	10.87	2.81	24.39
52802	White Diamond Brand Fertilizer Jack Rabbit Guarantee.....	4.00	8.00	6.00	25.80
	Analysis.....	4.25	8.24	6.07	26.77
52803	White Diamond Brand Fertilizer Old Reliable Guarantee.....	4.00	8.00	4.00	23.60
53443	Analysis.....	4.16	8.28	4.08	24.41
	Analysis.....	4.16	8.93	4.35	25.49
53444	White Diamond Potato Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
53469	Analysis.....	3.93	8.72	6.41	26.94
	Analysis.....	3.95	8.18	6.22	26.14
	<b>Armour Fertilizer Works, Houston, Fort Worth, Texas, and New Orleans, La.</b>				
	Armour's Big Crop Fertilizer 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
52542	Analysis.....	3.02	9.74	3.15	22.41
52875	Analysis.....	3.21	10.25	2.96	23.26
52915	Analysis.....	3.14	10.50	3.04	23.48
53042	Analysis.....	3.09	10.15	3.01	22.91
53250	Analysis.....	3.22	10.05	3.04	23.13
	Armour's Big Crop Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
52465	Analysis.....	4.11	8.06	4.08	24.02
52552	Analysis.....	4.05	8.43	4.18	24.44
52557	Analysis.....	4.07	7.98	4.03	23.78
53101	Analysis.....	4.06	8.03	4.08	23.87
53107	Analysis.....	4.00	8.21	4.36	24.25
53194	Analysis.....	4.04	9.56	3.54	25.06
53408	Analysis.....	3.97	8.56	3.78	23.96
	Armour's Big Crop Fertilizer 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
52888	Analysis.....	3.92	9.19	5.47	26.46
53102	Analysis.....	4.02	8.01	5.73	25.56
53253	Analysis.....	4.02	10.27	6.13	28.71
53341	Analysis.....	4.08	8.39	6.10	26.57
	Armour's Big Crop Fertilizer 4-10-0 Guarantee.....	4.00	10.00	.....	21.60
53213	Analysis.....	4.14	9.21	.....	20.99
53225	Analysis.....	4.15	9.10	.....	20.88
53234	Analysis.....	4.14	9.30	.....	21.10
53244	Analysis.....	4.19	10.48	.....	22.64
	Armour's Big Crop Fertilizer 4-10-7 Guarantee.....	4.00	10.00	7.00	29.30
52537	Analysis.....	4.03	10.64	7.63	30.83
53252	Analysis.....	3.99	8.99	5.57	26.50
	Armour's Big Crop Fertilizer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
52442	Analysis.....	4.14	12.38	4.03	29.23
52543	Analysis.....	4.04	12.13	4.13	28.80
52749	Analysis.....	4.09	12.42	4.02	29.14
52760	Analysis.....	4.14	12.34	3.84	28.97
52775	Analysis.....	4.10	12.39	4.01	29.12
52780	Analysis.....	4.00	12.14	3.85	28.41
52836	Analysis.....	4.04	12.37	4.09	29.04

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Armour Fertilizer Works, Houston, Fort Worth, Texas, and New Orleans, La. Continued.				
	Armour's Big Crop Fertilizer 4-12-4—Continued—				
	Guarantee.....	4.00	12.00	4.00	28.40
52842	Analysis.....	4.02	12.37	4.17	29.08
52854	Analysis.....	4.22	12.70	3.83	29.58
52858	Analysis.....	4.14	12.45	4.03	29.31
52881	Analysis.....	4.13	12.54	3.75	29.09
52883	Analysis.....	4.15	12.60	4.08	29.57
52957	Analysis.....	4.20	12.10	4.06	29.07
52997	Analysis.....	4.08	12.34	3.92	28.91
53048	Analysis.....	4.26	12.03	4.05	29.12
53195	Analysis.....	4.06	12.24	3.85	28.67
53203	Analysis.....	4.04	12.55	4.07	29.24
53409	Analysis.....	4.05	12.01	3.93	28.45
	Armour's Big Crop Fertilizer 5-15-5 Guarantee.....	5.00	15.00	5.00	35.50
52425	Analysis.....	5.02	15.27	5.03	35.90
52441	Analysis.....	5.24	14.76	5.17	35.98
52453	Analysis.....	5.09	14.83	5.16	35.70
52464	Analysis.....	5.01	14.88	5.01	35.39
	Armour's Big Crop Fertilizer 6-8-4 Guarantee.....	6.00	8.00	4.00	28.40
53117	Analysis.....	5.85	9.06	3.06	28.28
	Armour's Big Crop Fertilizer 6-9-3 Guarantee.....	6.00	9.00	3.00	28.50
52622	Analysis.....	6.08	9.01	3.95	29.75
	Armour's Big Crop Fertilizer 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
52443	Analysis.....	5.94	10.29	7.31	34.65
52536	Analysis.....	6.12	10.33	7.19	35.00
52569	Analysis.....	6.27	10.63	6.69	35.17
52634	Analysis.....	6.14	10.89	7.06	35.58
52884	Analysis.....	6.35	10.53	7.08	35.67
53049	Analysis.....	5.94	9.86	6.82	33.59
	Armour's Big Crop Fertilizer 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
52432	Analysis.....	6.28	12.55	6.05	36.79
52440	Analysis.....	6.22	12.24	6.21	36.45
52454	Analysis.....	6.10	11.45	6.60	35.64
52510	Analysis.....	6.06	12.42	6.01	36.05
52585	Analysis.....	5.94	12.20	6.11	35.62
52635	Analysis.....	6.25	12.69	6.04	36.87
52887	Analysis.....	6.06	12.59	6.03	36.28
53251	Analysis.....	6.13	12.39	5.74	35.89
	Armour's Big Crop Fertilizer 10-20-10 Guarantee.....	10.00	20.00	10.00	59.00
52901	Analysis.....	10.03	20.16	10.31	59.60
	Armour's Big Crop Fertilizer 11-48-0 Guarantee.....	11.00	48.00	.....	84.00
52518	Analysis.....	10.98	44.09	.....	79.26
	Armour's Big Crop Fertilizer 16-20-0 Guarantee.....	16.00	20.00	.....	62.40
52436	Analysis.....	15.94	20.86	.....	63.29
	Armour's Big Crop Fertilizer Old Black Joe Guarantee.....	4.00	8.00	4.00	23.60
52491	Analysis.....	4.27	8.53	4.29	25.21
52544	Analysis.....	4.00	8.25	4.21	24.13
52547	Analysis.....	4.11	8.64	4.32	24.98
52568	Analysis.....	4.06	8.29	4.17	24.28
52662	Analysis.....	4.02	8.09	4.05	23.82
52837	Analysis.....	4.08	8.04	4.20	24.06
52874	Analysis.....	4.06	8.82	4.06	24.79
53041	Analysis.....	4.09	8.04	4.14	24.02
53243	Analysis.....	4.02	8.83	4.06	24.72
53292	Analysis.....	3.95	8.30	4.24	24.10
53336	Analysis.....	4.17	8.76	3.85	24.76
53342	Analysis.....	4.06	8.28	4.06	24.15
	Armour's Big Crop Raw Bone Meal Guarantee.....	3.70	*22.00	.....	26.48
52433	Analysis.....	4.37	*22.22	.....	28.27
52828	Analysis.....	4.29	*23.18	.....	28.84
	Armour's Big Crop Sulphate of Ammonia 20% Guarantee.....	20.00	.....	.....	48.00
52430	Analysis.....	19.84	.....	.....	47.62

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Armour Fertilizer Works, Houston, Fort Worth, Texas, and New Orleans, La. Continued.</b>				
	Armour's Big Crop Sulphate of Ammonia 20%— Continued— Guarantee.....	20.00	.....	.....	48.00
52476	Analysis.....	19.07	.....	.....	45.77
52495	Analysis.....	19.92	.....	.....	47.81
53241	Analysis.....	20.52	.....	.....	49.25
	Armour's Big Crop Superphosphate 18% Guarantee.....	18.00	.....	.....	21.60
53050	Analysis.....	17.32	.....	.....	20.78
53231	Analysis.....	17.31	.....	.....	20.77
	Armour's Big Crop Superphosphate 20% Guarantee.....	20.00	.....	.....	24.00
52507	Analysis.....	18.86	.....	.....	22.63
52841	Analysis.....	19.32	.....	.....	23.18
	Armour's Plow Brand Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
53424	Analysis.....	4.07	8.04	4.12	23.95
	<b>The Barrett Company, New York, New York</b>				
	Arcadian, the American Nitrate of Soda Guarantee.....	16.00	.....	.....	38.40
53315	Analysis.....	16.22	.....	.....	38.93
	<b>Bryan Cotton Oil &amp; Fertilizer Company, Bryan, Texas</b>				
	Star Brand Cotton and Corn Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
52538	Analysis.....	2.88	9.68	3.83	22.74
52876	Analysis.....	3.15	9.72	3.81	23.41
52991	Analysis.....	3.58	10.18	3.33	24.47
	Star Brand Special Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
52539	Analysis.....	3.79	11.56	4.40	27.81
52877	Analysis.....	4.13	11.72	4.37	28.78
52992	Analysis.....	3.66	11.67	5.96	29.34
	Star Brand 20% Superphosphate Guarantee.....	20.00	.....	.....	24.00
52541	Analysis.....	20.06	.....	.....	24.07
52989	Analysis.....	19.79	.....	.....	23.75
	Star Brand Tomato Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
52878	Analysis.....	5.69	11.32	6.89	34.82
52990	Analysis.....	5.40	10.82	6.39	32.97
	Star Brand Truck Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
52540	Analysis.....	3.69	7.76	4.32	22.70
52993	Analysis.....	3.66	8.08	3.87	22.74
	<b>Campbell Fertilizer Company, Houston, Texas</b>				
	All-Weather Organic Base Fertilizer 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
52526	Analysis.....	3.20	11.59	4.85	26.93
52897	Analysis.....	2.88	12.13	3.72	25.56
53270	Analysis.....	2.46	12.67	2.81	24.19
	All-Weather Organic Base Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
53278	Analysis.....	4.06	8.74	6.75	27.66
	All-Weather Organic Base Fertilizer 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
52515	Analysis.....	4.52	9.07	9.31	31.97
52527	Analysis.....	4.50	8.37	8.01	29.65
52531	Analysis.....	4.49	8.59	8.39	30.32
53256	Analysis.....	3.73	11.03	7.48	30.42
53277	Analysis.....	3.56	8.92	9.89	30.12
	All-Weather Organic Base Fertilizer 4-10-7 Guarantee.....	4.00	10.00	7.00	29.30
52516	Analysis.....	4.47	11.39	8.78	34.06
52532	Analysis.....	4.66	10.53	8.78	33.48
	All-Weather Organic Base Fertilizer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
52457	Analysis.....	4.55	13.17	4.23	31.37
52488	Analysis.....	4.03	12.45	6.51	31.77
52776	Analysis.....	4.16	13.86	7.11	34.43
53208	Analysis.....	4.15	12.18	5.00	30.08
53260	Analysis.....	4.21	12.67	4.79	30.57
53276	Analysis.....	4.12	13.75	5.26	32.18
	All-Weather Organic Base Fertilizer 5-15-0 Guarantee.....	5.00	15.00	.....	30.00
52489	Analysis.....	5.41	18.65	.....	35.36
	All-Weather Organic Base Fertilizer 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
52449	Analysis.....	8.06	9.10	8.88	40.03
52456	Analysis.....	7.65	9.92	7.31	38.30

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Laboratory Number	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Campbell Fertilizer Company, Houston, Texas—Continued.</b>				
	All-Weather Organic Base Fertilizer 6-10-7—Continued				
	Guarantee.....	6.00	10.00	7.00	34.10
	All-Weather Organic Base Fertilizer 6-12-6 Guarantee..	6.00	12.00	6.00	35.40
52450	Analysis.....	7.21	13.07	6.29	39.90
52455	Analysis.....	6.38	13.00	7.59	39.26
	0-12-4 All-Weather Louisiana Special Guarantee.....		12.00	4.00	18.80
52902	Analysis.....		14.74	4.33	22.45
53210	Analysis.....		14.98	4.20	22.60
	3-10-0 All-Weather Rice Special Fertilizer Guarantee..	3.00	10.00		19.20
52903	Analysis.....	3.03	11.68		21.29
53209	Analysis.....	2.83	10.47		19.85
53227	Analysis.....	2.72	10.93		19.65
53233	Analysis.....	2.58	11.06		19.46
53254	Analysis.....	2.74	10.62		19.32
	4-10-0 All-Weather Rice Fertilizer Guarantee.....	4.00	10.00		21.60
53226	Analysis.....	3.98	10.69		22.38
53255	Analysis.....	3.88	16.08		28.61
	All-Weather Raw Bone Meal Guarantee.....	3.70	*22.00		26.48
53230	Analysis.....	4.01	*22.10		27.30
	<b>Chilean Nitrate Sales Corporation, 120 Broadway, New York, New York</b>				
	Champion Brand Chilean Nitrate of Soda Guarantee..	16.00			38.40
52423	Analysis.....	16.30			39.12
52428	Analysis.....	16.29			39.10
52431	Analysis.....	16.38			39.31
52838	Analysis.....	16.62			39.89
53368	Analysis.....	16.12			38.69
	<b>Consolidated Chemical Industries, Inc., Houston, Texas</b>				
	"T. C. C." Brand Powdered Raw Bone Guarantee.....	4.00	*17.00		23.20
52895	Analysis.....	3.90	*17.14		23.07
	"T. C. C." Brand Raw Bone Meal Guarantee.....	3.70	*22.00		26.48
52517	Analysis.....	3.92	*21.66		26.74
52520	Analysis.....	4.47	*21.25		27.73
52898	Analysis.....	4.32	*24.02		29.59
53216	Analysis.....	4.15	*21.83		27.42
53220	Analysis.....	4.16	*22.12		27.68
53236	Analysis.....	4.15	*22.43		27.90
53240	Analysis.....	4.10	*22.41		27.77
	<b>David Hardie Seed Company, Dallas, Texas</b>				
	Hardie's All-Purpose Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
52827	Analysis.....	4.36	12.33	3.67	29.30
	<b>The Davison Chemical Corporation, New Orleans, La.</b>				
	Bull Dog Special No. 484 Guarantee.....	4.00	8.00	4.00	23.60
52756	Analysis.....	4.17	8.36	3.83	24.25
	Bull Dog Special No. 4100 Guarantee.....	4.00	10.00		21.60
53217	Analysis.....	4.59	10.39		23.49
	<b>Dixie Chemical Company, Sulphur Springs, Texas</b>				
	Dixie 3-10-3 Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
53098	Analysis.....	3.18	10.61	3.26	23.95
	Dixie 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
53131	Analysis.....	4.25	8.15	3.81	24.17
	Dixie 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
53132	Analysis.....	4.17	9.17	6.10	27.72
	Dixie 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
53097	Analysis.....	4.36	11.96	4.25	29.49
	<b>East Texas Cotton Oil Company, Tyler Texas</b>				
	ETCO 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
52612	Analysis.....	3.97	8.02	5.75	25.48
52618	Analysis.....	4.17	8.15	5.94	26.32
53020	Analysis.....	3.83	8.37	6.23	26.08
	ETCO 4-10-0 Guarantee.....	4.00	10.00		21.60
52611	Analysis.....	3.99	9.22		20.64

\*Total phosphoric acid



Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>East Texas Cotton Oil Company, Tyler, Texas—Continued.</b>					
53022	ETCO 6-8-4 Fertilizer Guarantee.....	6.00	8.00	4.00	28.40
	Analysis.....	5.88	8.73	4.06	29.06
52820	ETCO 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
	Analysis.....	5.88	10.35	7.09	34.33
53364	ETCO 18 Percent Superphosphate Guarantee.....	.....	18.00	.....	21.60
	Analysis.....	.....	18.25	.....	21.90
52613	ETCO Potato Producer Guarantee.....	4.00	8.00	4.00	23.60
	Analysis.....	4.07	8.59	3.89	24.36
52619	Analysis.....	4.02	7.78	4.10	23.50
52821	Analysis.....	3.76	8.06	4.02	23.11
53019	Analysis.....	3.84	9.06	3.82	24.29
53345	Analysis.....	3.77	8.22	3.77	23.06
53365	Analysis.....	5.93	7.32	3.28	26.62
52813	Goldenrod 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
	Analysis.....	4.23	8.45	5.89	26.77
52951	Analysis.....	4.24	7.77	5.16	25.18
52996	Analysis.....	4.08	7.56	5.46	24.87
53362	Analysis.....	3.94	8.09	6.05	25.83
52808	Goldenrod 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
	Analysis.....	4.17	12.00	4.20	29.03
52812	Analysis.....	4.44	11.67	4.07	29.14
52832	Analysis.....	4.12	12.28	4.39	29.46
52995	Analysis.....	4.10	11.14	4.08	27.70
53346	Analysis.....	3.94	12.32	3.85	28.48
53482	Analysis.....	3.66	12.45	4.05	28.18
52621	Goldenrod 6-9-3 Fertilizer Guarantee.....	6.00	9.00	3.00	28.50
	Analysis.....	6.14	9.11	3.27	29.27
53023	Goldenrod 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
	Analysis.....	5.78	10.05	6.59	33.18
52814	Goldenrod Meal Formula Guarantee.....	3.00	10.00	3.00	22.50
	Analysis.....	3.26	10.48	3.18	23.90
52949	Analysis.....	3.05	10.39	3.01	23.10
52809	Goldenrod Potato Producer Guarantee.....	4.00	8.00	4.00	23.60
	Analysis.....	3.91	8.21	4.08	23.72
52950	Analysis.....	4.26	7.37	3.82	23.26
53361	Analysis.....	3.99	8.35	3.71	23.68
53363	Goldenrod Sulphate of Ammonia Guarantee.....	20.00	.....	.....	48.00
	Analysis.....	20.35	.....	.....	48.84
53013	Goldenrod 18 Per Cent Superphosphate Guarantee.....	.....	18.00	.....	21.60
	Analysis.....	.....	19.19	.....	23.03
52620	Goldenrod Verifine Guarantee.....	6.00	12.00	6.00	35.40
	Analysis.....	5.96	12.04	6.03	35.38
<b>Farmers Cotton Oil Company, Winnsboro, Texas</b>					
53092	Farmers Fertilizer No. 484 Guarantee.....	4.00	8.00	4.00	23.60
	Analysis.....	4.05	8.31	3.72	23.78
52667	Farmers Fertilizer No. 486 Guarantee.....	4.00	8.00	6.00	25.80
	Analysis.....	3.75	7.81	5.45	24.37
53090	Analysis.....	3.73	8.25	5.38	24.81
53476	Analysis.....	3.99	8.50	5.25	25.56
52668	Farmers Fertilizer No. 4124 Guarantee.....	4.00	12.00	4.00	28.40
	Analysis.....	3.74	11.71	4.07	27.51
53091	Analysis.....	4.02	11.83	4.28	28.56
53475	Farmers Fertilizer No. 693 Guarantee.....	6.00	9.00	3.00	28.50
	Analysis.....	5.42	8.89	3.10	27.09
53477	Farmers Fertilizer No. 6107 Guarantee.....	6.00	10.00	7.00	34.10
	Analysis.....	5.36	10.21	5.45	31.11

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Federal Chemical Company, Inc., Shreveport, La.</b>				
	Daybreak Dixie Special Guarantee.....	4.00	8.00	4.00	23.60
53064	Analysis.....	3.83	7.50	4.35	22.98
53115	Analysis.....	3.97	8.21	3.86	23.63
	Daybreak Double Duty Guarantee.....	4.00	12.00	4.00	28.40
52743	Analysis.....	4.02	12.04	4.44	28.98
52800	Analysis.....	4.09	11.25	4.17	27.91
53187	Analysis.....	4.08	11.28	4.07	27.81
	Daybreak Favorite Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
52742	Analysis.....	3.15	10.12	3.41	23.45
	Daybreak Truckers Special Guarantee.....	4.00	8.00	6.00	25.80
52801	Analysis.....	4.06	8.20	6.05	26.24
52825	Analysis.....	3.92	8.49	6.19	26.41
53021	Analysis.....	4.03	8.36	6.20	26.52
53065	Analysis.....	3.76	8.09	6.38	25.75
53337	Analysis.....	4.07	8.41	5.89	26.34
53479	Analysis.....	4.14	8.30	5.34	25.77
	Meridian 6-8-4 Fertilizer Guarantee.....	6.00	8.00	4.00	28.40
52798	Analysis.....	5.80	8.05	4.00	28.86
53159	Analysis.....	6.05	8.20	4.09	28.86
	Meridian Dixie Special Guarantee.....	4.00	8.00	4.00	23.60
52555	Analysis.....	4.05	8.00	4.15	23.89
52632	Analysis.....	3.91	8.37	4.05	23.88
52810	Analysis.....	4.09	8.13	4.02	24.00
52870	Analysis.....	3.92	8.59	3.78	23.88
52929	Analysis.....	4.07	8.08	4.14	24.02
53063	Analysis.....	3.95	7.79	4.13	23.37
53121	Analysis.....	4.06	8.17	4.20	24.16
53134	Analysis.....	3.81	7.64	4.09	22.81
53140	Analysis.....	3.97	8.11	4.14	23.81
53308	Analysis.....	4.02	7.69	4.06	23.35
53343	Analysis.....	4.10	7.21	4.34	23.26
53351	Analysis.....	4.34	8.56	3.43	24.46
53459	Analysis.....	4.01	8.08	4.18	23.92
	Meridian Double Duty Guarantee.....	4.00	12.00	4.00	28.40
52554	Analysis.....	4.07	11.08	4.11	27.59
52567	Analysis.....	4.08	11.60	4.03	28.14
52572	Analysis.....	4.06	11.09	4.18	27.65
52705	Analysis.....	3.75	11.76	4.06	27.58
52713	Analysis.....	4.09	12.05	4.24	28.94
52733	Analysis.....	4.07	11.45	4.27	28.21
52869	Analysis.....	4.24	11.69	4.37	29.02
52908	Analysis.....	4.10	10.95	3.90	27.27
52932	Analysis.....	4.31	11.45	4.31	28.82
53053	Analysis.....	4.18	11.51	4.19	28.45
53167	Analysis.....	4.03	11.02	4.15	27.46
53180	Analysis.....	4.04	12.06	4.23	28.82
53301	Analysis.....	3.94	12.08	4.04	28.40
53334	Analysis.....	4.28	12.52	4.02	29.71
	Meridian Perfect Guano Guarantee.....	6.00	12.00	6.00	35.40
52584	Analysis.....	5.98	11.56	6.34	35.19
52712	Analysis.....	5.52	11.51	6.36	34.06
53326	Analysis.....	5.90	12.34	6.06	35.60
	Meridian Perfection Formula Guarantee.....	6.00	9.00	3.00	28.50
53054	Analysis.....	5.69	8.28	3.71	27.68
	Meridian Home Mixture Guarantee.....	3.00	10.00	3.00	22.50
52553	Analysis.....	3.17	9.73	3.36	22.99
52571	Analysis.....	3.05	9.58	3.34	22.49
52734	Analysis.....	3.14	9.38	3.17	22.29
52735	Analysis.....	3.33	9.59	3.34	23.17

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Federal Chemical Company, Inc., Shreveport, La.</b>				
	—Continued.				
	Meridian Home Mixture—Continued—Guarantee.....	3.00	10.00	3.00	22.50
52871	Analysis.....	3.21	9.85	3.19	23.03
52927	Analysis.....	3.06	9.87	3.04	22.52
53166	Analysis.....	3.05	9.56	3.06	22.16
53172	Analysis.....	3.12	9.70	3.02	22.45
	Meridian Southern Mixture Guarantee.....	4.00	10.00	.....	21.60
52593	Analysis.....	4.14	10.05	.....	22.00
	Meridian Special Mixture Guarantee.....	6.00	10.00	7.00	34.10
52566	Analysis.....	6.02	9.45	7.02	33.51
52570	Analysis.....	5.84	9.30	6.95	32.83
52670	Analysis.....	5.92	9.67	7.17	33.70
52799	Analysis.....	6.06	9.30	7.13	33.54
52907	Analysis.....	5.97	9.27	6.66	32.78
52973	Analysis.....	5.83	9.19	7.09	32.82
53181	Analysis.....	6.06	10.19	6.84	34.29
53307	Analysis.....	6.02	9.17	6.68	32.80
53344	Analysis.....	5.53	10.01	6.31	32.22
	Meridian 18% Superphosphate Guarantee.....	.....	18.00	.....	21.60
52933	Analysis.....	.....	19.29	.....	23.15
	Meridian 20% Superphosphate Guarantee.....	.....	20.00	.....	24.00
52928	Analysis.....	.....	20.56	.....	24.67
	Meridian Truckers Special Guarantee.....	4.00	8.00	6.00	25.80
52556	Analysis.....	4.15	8.20	6.13	26.54
52633	Analysis.....	3.87	8.53	6.08	26.22
52644	Analysis.....	3.91	8.77	5.85	26.34
52663	Analysis.....	3.69	8.27	5.56	24.90
52704	Analysis.....	3.97	8.54	6.49	26.92
52807	Analysis.....	4.05	8.46	5.79	26.24
52909	Analysis.....	4.21	8.10	5.44	25.80
53120	Analysis.....	4.06	8.11	5.70	25.74
53437	Analysis.....	4.08	7.83	5.77	25.54
53350	Analysis.....	4.02	7.74	5.69	25.20
53465	Analysis.....	4.04	8.14	5.70	25.74
53474	Analysis.....	4.15	8.12	5.62	25.88
	<b>Fidelity Chemical Corporation, Houston, Texas</b>				
	Fidelity 3-10-3 Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
52603	Analysis.....	3.04	9.74	3.76	23.13
52786	Analysis.....	3.32	10.29	3.05	23.68
52889	Analysis.....	3.15	10.40	3.16	23.52
53183	Analysis.....	3.04	10.09	3.51	23.27
53392	Analysis.....	3.29	10.01	3.45	23.71
	Fidelity 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
52511	Analysis.....	4.32	8.52	4.24	25.25
52514	Analysis.....	4.10	8.55	4.02	24.52
52551	Analysis.....	4.18	8.29	4.16	24.56
52924	Analysis.....	4.04	8.03	4.11	23.86
52968	Analysis.....	4.15	8.59	4.18	24.87
53170	Analysis.....	4.08	9.13	5.25	26.53
53211	Analysis.....	4.34	8.19	4.08	24.74
53323	Analysis.....	4.14	8.62	4.06	24.75
53385	Analysis.....	4.37	8.16	3.54	24.17
53390	Analysis.....	4.23	8.29	4.02	24.52
53473	Analysis.....	4.28	8.23	3.73	24.25
	Fidelity 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
52504	Analysis.....	3.91	8.52	6.07	26.28
52818	Analysis.....	4.14	8.43	6.01	26.67
52865	Analysis.....	3.56	8.48	6.89	26.30
52893	Analysis.....	4.13	9.30	5.45	27.07
52899	Analysis.....	4.60	9.42	5.18	28.04
52923	Analysis.....	4.14	8.20	6.13	26.52
53086	Analysis.....	4.18	9.42	5.39	27.26

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Fidelity Chemical Corporation, Houston, Texas—Continued.</b>				
	Fidelity 4-8-6 Fertilizer—Continued—Guarantee.....	4.00	8.00	6.00	25.80
53248	Analysis.....	4.03	8.81	6.31	27.18
53262	Analysis.....	6.21	7.32	5.30	29.51
53272	Analysis.....	4.37	8.33	5.53	26.57
	Fidelity 4-10-0 Fertilizer Guarantee.....	4.00	10.00	.....	21.60
53232	Analysis.....	4.32	8.70	.....	20.81
	Fidelity 4-10-7 Fertilizer Guarantee.....	4.00	10.00	7.00	29.30
52437	Analysis.....	4.61	10.40	6.72	30.93
	Fidelity 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
52469	Analysis.....	4.22	11.70	4.10	28.68
52741	Analysis.....	4.30	12.23	4.31	29.74
52759	Analysis.....	4.18	12.06	4.35	29.29
52785	Analysis.....	4.24	12.72	4.06	29.91
52844	Analysis.....	4.22	12.08	4.13	29.17
52857	Analysis.....	4.16	12.15	4.25	29.24
52862	Analysis.....	4.24	12.12	4.04	29.16
52864	Analysis.....	4.19	12.52	3.75	29.21
52890	Analysis.....	4.17	12.07	3.88	28.76
52894	Analysis.....	4.13	12.59	4.03	29.45
52917	Analysis.....	4.19	12.25	4.03	29.19
52966	Analysis.....	4.22	12.21	4.01	29.19
52971	Analysis.....	4.23	11.78	4.02	28.71
53182	Analysis.....	4.05	11.66	3.86	27.96
53245	Analysis.....	4.56	11.80	4.19	29.71
53271	Analysis.....	4.13	11.53	3.81	27.94
53274	Analysis.....	4.32	11.72	3.83	28.64
	Fidelity 5-15-5 Fertilizer Guarantee.....	5.00	15.00	5.00	35.50
52444	Analysis.....	5.26	15.09	5.04	36.27
52482	Analysis.....	5.56	14.71	5.07	36.57
52513	Analysis.....	4.64	15.83	5.18	35.84
52891	Analysis.....	5.82	14.77	4.74	36.90
	Fidelity 6-8-4 Fertilizer Guarantee.....	6.00	8.00	4.00	23.40
53246	Analysis.....	5.31	9.65	4.05	28.78
	Fidelity 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
52447	Analysis.....	5.81	10.16	7.77	34.68
52475	Analysis.....	6.15	10.16	7.36	35.05
52505	Analysis.....	5.99	9.98	7.39	34.49
52794	Analysis.....	6.07	10.65	6.34	34.32
52819	Analysis.....	6.06	10.35	6.51	34.12
53282	Analysis.....	6.04	10.07	7.44	34.76
53319	Analysis.....	6.06	10.06	6.75	34.04
	Fidelity 6-12-6 Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
52426	Analysis.....	6.41	13.01	7.03	38.72
52438	Analysis.....	6.04	12.27	6.44	36.30
52446	Analysis.....	6.15	12.35	6.01	36.19
52448	Analysis.....	7.05	11.41	6.18	37.41
52470	Analysis.....	6.16	12.23	6.07	36.14
52474	Analysis.....	6.35	12.47	5.60	36.36
52484	Analysis.....	6.35	12.44	5.86	36.62
52509	Analysis.....	5.94	12.11	6.10	35.50
52513	Analysis.....	6.18	12.48	6.02	36.43
52789	Analysis.....	6.15	12.44	6.07	36.37
53391	Analysis.....	5.67	10.89	6.72	34.07
	Fidelity 10-20-10 Fertilizer Guarantee.....	10.00	20.00	10.00	59.00
52445	Analysis.....	9.79	19.73	10.39	58.61
	Fidelity 11-48-0 Fertilizer Guarantee.....	11.00	48.00	.....	84.00
52485	Analysis.....	12.50	44.55	.....	83.46
	Fidelity Sulphate of Ammonia Guarantee.....	20.00	.....	.....	48.00
52481	Analysis.....	20.35	.....	.....	48.84
52490	Analysis.....	20.38	.....	.....	48.91
	Fidelity 18% Superphosphate Guarantee.....	.....	18.00	.....	21.60
52707	Analysis.....	.....	17.42	.....	20.90

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Fidelity Chemical Corporation, Houston, Texas—Continued.</b>					
	Fidelity 18% Superphosphate—Continued—Guarantee.....		18.00		21.60
52892	Analysis.....		18.86		22.63
53198	Analysis.....		18.11		21.73
53247	Analysis.....		19.29		23.15
53281	Analysis.....		18.37		22.04
	Fidelity 20% Superphosphate Guarantee.....		20.00		24.00
52788	Analysis.....		20.35		24.42
52967	Analysis.....		21.64		25.97
53273	Analysis.....		20.61		24.73
	Fidelity 20% Kainit Guarantee.....			20.00	22.00
52969	Analysis.....			20.60	22.66
<b>Ford Motor Company, Dearborn, Michigan</b>					
	Ford Ammonium Sulphate Guarantee.....	20.80			49.92
52487	Analysis.....	20.87			50.09
52522	Analysis.....	20.88			50.11
52826	Analysis.....	20.57			49.37
52900	Analysis.....	21.07			50.57
53249	Analysis.....	21.03			50.47
53261	Analysis.....	21.22			50.93
<b>Gilmer Cotton Oil &amp; Fertilizer Company, Gilmer, Texas</b>					
	G. C. O. & F. Co's 4-8-4 Cotton Grower Guarantee.....	4.00	8.00	4.00	23.60
53077	Analysis.....	3.86	8.92	3.64	23.96
53427	Analysis.....	3.87	8.13	3.55	22.96
	G. C. O. & F. Co's 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
52650	Analysis.....	4.04	12.12	4.07	28.72
	G. C. O. & F. Co's 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
52651	Analysis.....	6.16	9.83	7.20	34.50
	G. C. O. & F. Co's Special Cotton Grower Guarantee.....	6.00	12.00	6.00	35.40
53079	Analysis.....	6.22	12.02	5.91	35.85
53429	Analysis.....	5.70	12.14	5.28	34.06
	G. C. O. & F. Co's Superior Meal Compound Guarantee.....	3.00	10.00	3.00	22.50
53078	Analysis.....	3.23	9.58	3.06	22.62
53428	Analysis.....	2.99	10.09	3.08	22.68
	G. C. O. & F. Co's 4-8-6 Tomato Grower Guarantee.....	4.00	8.00	6.00	25.80
52642	Analysis.....	4.09	8.02	6.35	26.43
52649	Analysis.....	4.07	8.14	6.27	26.44
53074	Analysis.....	4.22	7.53	5.85	25.61
<b>Houston Packing Company, Houston, Texas</b>					
	Houston's High Grade 3-10-3 Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
52524	Analysis.....	4.07	12.49	3.08	28.15
	Houston's B & B Fertilizer Guarantee.....	4.70	*15.50		23.68
52525	Analysis.....	4.67	*20.16		27.34
	Marvelgro Plant Food Guarantee.....	4.00	12.00	4.00	28.40
52523	Analysis.....	4.48	13.45	3.63	30.88
<b>International Agricultural Corporation, Texarkana, Arkansas-Texas</b>					
	International 3-10-3 Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
52573	Analysis.....	3.01	9.92	3.30	22.75
53100	Analysis.....	3.28	10.02	3.31	23.53
53116	Analysis.....	3.09	9.57	3.36	22.60
53139	Analysis.....	3.05	10.03	3.04	22.70
53452	Analysis.....	3.10	10.46	3.16	23.47
	International 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
52574	Analysis.....	3.92	8.43	4.08	24.02
52653	Analysis.....	4.00	7.84	4.22	23.65
53000	Analysis.....	3.97	8.12	4.02	23.69
53014	Analysis.....	3.83	8.42	4.12	23.82
53035	Analysis.....	3.97	8.31	4.02	23.92
53127	Analysis.....	4.02	7.38	4.16	23.09
53146	Analysis.....	3.95	8.19	4.20	23.93
53154	Analysis.....	3.91	7.65	4.34	23.33

\*Total phosphoric acid



Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>International Agricultural Corporation, Texarkana, Arkansas-Texas—Continued.</b>					
	International 4-8-4 Fertilizer—Continued—Guarantee.....	4.00	8.00	4.00	28.60
53378	Analysis.....	3.92	8.17	4.07	23.69
53406	Analysis.....	3.93	7.78	4.15	23.34
53410	Analysis.....	4.15	8.04	4.04	24.05
53446	Analysis.....	4.04	8.34	4.11	24.23
53468	Analysis.....	3.84	8.75	3.78	23.88
	International 4-8-6 Truck Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
52575	Analysis.....	4.04	8.63	5.49	26.10
53099	Analysis.....	4.02	8.09	5.78	25.72
53104	Analysis.....	3.99	7.71	5.86	25.28
53109	Analysis.....	3.95	7.44	6.28	25.32
53445	Analysis.....	3.96	8.34	6.03	26.14
	International 4-10-0 Ammoniated Compound Guarantee.....	4.00	10.00	.....	21.60
53108	Analysis.....	4.18	10.31	.....	22.40
	International 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
52824	Analysis.....	4.02	11.92	4.01	28.36
53012	Analysis.....	4.06	11.87	4.27	28.68
53089	Analysis.....	4.01	12.11	4.21	28.78
53126	Analysis.....	4.05	12.04	4.30	28.90
53156	Analysis.....	4.06	11.60	4.36	28.46
53376	Analysis.....	4.01	12.08	4.04	28.56
	International 6-8-4 Fertilizer Guarantee.....	6.00	8.00	4.00	28.40
52682	Analysis.....	6.03	8.64	4.37	29.65
53155	Analysis.....	5.55	9.10	3.78	28.40
	International 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
52596	Analysis.....	6.13	10.44	7.29	35.26
52654	Analysis.....	5.93	10.31	7.20	34.52
53329	Analysis.....	5.81	10.30	7.07	34.08
	International 6-12-6 Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
52706	Analysis.....	6.01	12.14	6.05	35.65
	International 4-8-10 Potato Fertilizer Guarantee.....	4.00	8.00	10.00	30.20
53439	Analysis.....	4.02	8.55	9.88	30.78
	International Rainbow Cotton Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
53461	Analysis.....	3.94	12.46	3.87	28.67
	International 18% Superphosphate Guarantee.....	.....	18.00	.....	21.60
53036	Analysis.....	.....	18.64	.....	22.37
53148	Analysis.....	.....	18.00	.....	21.60
<b>Jacksonville Fertilizer Company, Jacksonville, Texas</b>					
	Red Tomato 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
52987	Analysis.....	4.52	8.02	6.94	28.10
53320	Analysis.....	4.44	8.22	4.43	25.39
	Red Tomato 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
52588	Analysis.....	4.68	7.40	7.30	28.14
52986	Analysis.....	4.73	8.02	7.49	29.21
53312	Analysis.....	5.02	8.31	7.74	30.53
	Red Tomato 6-8-4 Fertilizer Guarantee.....	6.00	8.00	4.00	28.40
52589	Analysis.....	6.79	7.32	5.36	30.93
	Red Tomato 6-9-3 Fertilizer Guarantee.....	6.00	9.00	3.00	28.50
53008	Analysis.....	6.89	8.62	3.42	30.64
	Red Tomato 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
53321	Analysis.....	5.89	10.75	6.56	34.26
	Red Tomato 10-0-10 Fertilizer Guarantee.....	10.00	.....	10.00	35.00
53311	Analysis.....	10.55	.....	10.03	36.41
<b>Kelly-Weber &amp; Company, Inc., Lake Charles, La.</b>					
	Weber-King Brand Fertilizer Special No. 3103 Guarantee.....	3.00	10.03	3.00	22.50
52722	Analysis.....	3.17	10.09	2.95	22.97
52745	Analysis.....	3.03	9.75	3.10	22.38
53185	Analysis.....	3.18	9.94	2.92	22.77
	Weber-King Brand Fertilizer Special No. 484 Guarantee.....	4.00	8.00	4.00	23.60
52744	Analysis.....	3.82	7.29	4.54	22.91
52762	Analysis.....	4.01	8.00	3.69	23.28
53171	Analysis.....	3.66	8.91	4.08	23.96
53190	Analysis.....	4.00	8.22	2.40	22.10

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Kelly-Weber &amp; Company, Inc., Lake Charles, La.</b>				
	—Continued.				
52720	Weber-King Brand Fertilizer Special No. 486 Guarantee	4.00	8.00	6.00	25.80
	Analysis.....	4.14	8.05	6.13	26.34
	Weber-King Brand Fertilizer Special No. 4100 Guarantee	4.00	10.00	.....	21.60
53215	Analysis.....	4.18	9.27	.....	21.15
53223	Analysis.....	4.14	9.19	.....	20.97
53229	Analysis.....	3.73	10.02	.....	20.97
53235	Analysis.....	4.10	9.19	.....	20.87
53238	Analysis.....	4.10	8.55	.....	20.10
53242	Analysis.....	4.01	9.71	.....	21.27
	Weber-King Brand Fertilizer Special No. 4124 Guarantee	4.00	12.00	4.00	28.40
52721	Analysis.....	4.15	11.64	4.48	28.86
52763	Analysis.....	4.14	11.04	4.01	27.60
53184	Analysis.....	4.02	11.67	4.08	28.14
53237	Analysis.....	3.84	12.09	3.63	27.72
	Weber-King 18% Superphosphate Guarantee	.....	18.00	.....	21.60
53221	Analysis.....	.....	18.14	.....	21.77
53228	Analysis.....	.....	19.26	.....	23.11
	<b>Lockey Gin Service, Winnsboro, Texas</b>				
	Lockey's Melo Fertilizer 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
52666	Analysis.....	3.87	9.00	4.86	25.44
	<b>Longview Cotton Oil Company, Longview, Texas</b>				
	Longview Cotton and Corn Special Fertilizer Guarantee	4.00	12.00	4.00	28.40
53060	Analysis.....	4.12	12.05	4.24	29.01
	Longview Gregg County Special Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
53058	Analysis.....	4.19	7.77	4.20	24.00
	Longview Prize Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
52626	Analysis.....	5.80	12.03	6.34	35.33
53421	Analysis.....	5.99	12.08	7.20	36.80
	Longview Truck Special Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
52625	Analysis.....	4.21	7.79	6.05	26.11
53420	Analysis.....	4.06	8.17	6.54	26.73
	Longview Vegetable Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
52627	Analysis.....	6.44	8.73	7.41	34.09
53059	Analysis.....	6.23	9.81	7.81	35.31
	<b>Marshall Cotton Oil Company, Marshall, Texas</b>				
	Marshall 6-8-4 Fertilizer Guarantee.....	6.00	8.00	4.00	28.40
52637	Analysis.....	5.87	8.65	4.16	29.05
52698	Analysis.....	5.77	8.68	4.05	28.73
53055	Analysis.....	5.93	7.62	5.64	29.57
53418	Analysis.....	5.72	8.15	3.77	27.66
	Marshall Eclipse 3-10-3 Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
53416	Analysis.....	3.02	10.32	3.20	23.15
	Marshall Garden Fertilizer 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
52636	Analysis.....	4.04	9.03	5.48	26.57
52697	Analysis.....	4.18	8.77	5.42	26.51
53417	Analysis.....	4.06	8.02	5.77	25.71
	Marshall Kainit Guarantee.....	.....	.....	20.00	22.00
53173	Analysis.....	.....	.....	17.84	19.62
	Marshall Nut Producer 6-9-3 Guarantee.....	6.00	9.00	3.00	28.50
52725	Analysis.....	5.98	8.93	3.48	28.90
	Marshall Wonder Fertilizer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
52638	Analysis.....	4.09	12.16	4.22	29.05
53056	Analysis.....	4.05	11.48	4.09	28.00
53175	Analysis.....	3.89	12.10	4.13	28.40
	Truckers Delight 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
52688	Analysis.....	4.06	8.37	4.08	24.27
52724	Analysis.....	4.05	8.29	4.31	24.41
53145	Analysis.....	4.18	8.44	4.22	24.80
53152	Analysis.....	4.32	8.05	4.05	24.49
53174	Analysis.....	4.11	8.63	3.92	24.53

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Mixson Brothers, Kirbyville, Texas</b>					
52754	Jasco Brand Special No. 484 Guarantee.....	4.00	8.00	4.00	23.60
	Analysis.....	3.95	8.66	4.29	24.59
53201	Jasco Brand Special No. 4107 Guarantee.....	4.00	10.00	7.00	29.30
	Analysis.....	3.80	10.17	7.32	29.37
52753	Jasco Brand Special No. 4124 Guarantee.....	4.00	12.00	4.00	28.40
53202	Analysis.....	3.93	12.03	4.28	28.58
53207	Analysis.....	4.02	12.32	4.16	29.01
	Analysis.....	4.14	12.54	4.03	29.42
52751	Jasco Brand Special No. 6107 Guarantee.....	6.00	10.00	7.00	34.10
53200	Analysis.....	6.29	10.52	7.15	35.59
	Analysis.....	5.82	10.42	7.01	34.18
52752	Jasco Brand Special No. 6126 Guarantee.....	6.00	12.00	6.00	35.40
53199	Analysis.....	6.15	12.29	6.12	36.24
	Analysis.....	6.05	12.09	6.21	35.86
<b>Nicholson's Seed Store, Dallas, Texas</b>					
52829	Nicholson's All-Round Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
	Analysis.....	4.37	11.78	4.02	29.05
52830	Nicholson's Evergreen Lawn Dressing Guarantee.....	10.00	6.00	4.00	35.60
	Analysis.....	10.68	5.87	4.15	37.24
<b>Oil Mill &amp; Fertilizer Works, Henderson, Texas</b>					
52606	Wolf Brand 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
52994	Analysis.....	3.08	10.03	2.77	22.48
	Analysis.....	3.24	9.93	3.30	23.33
52604	Wolf Brand 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
53011	Analysis.....	4.37	8.02	3.41	23.86
53030	Analysis.....	4.25	7.94	3.79	23.90
53160	Analysis.....	4.05	8.07	4.19	24.01
53370	Analysis.....	4.28	7.67	4.03	23.90
53373	Analysis.....	4.13	8.51	4.25	24.80
53399	Analysis.....	4.75	7.78	4.03	25.17
	Analysis.....	4.20	8.06	4.38	24.57
52605	Wolf Brand 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
53032	Analysis.....	4.09	8.56	6.02	26.71
	Analysis.....	4.07	8.49	5.45	25.96
53033	Wolf Brand 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
	Analysis.....	3.84	12.06	2.40	26.33
53407	Analysis.....	4.09	12.73	2.01	27.31
	Analysis.....	3.89	11.37	4.65	28.10
53374	Wolf Brand 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
	Analysis.....	5.55	10.06	6.87	32.95
53371	30% Manure Salts Guarantee.....	.....	.....	30.00	33.00
	Analysis.....	.....	.....	33.65	37.02
53372	Wolf Brand Sulphate of Ammonia 20% Guarantee.....	20.00	.....	.....	48.00
	Analysis.....	20.30	.....	.....	48.72
<b>Palestine Oil Mill &amp; Fertilizer Works, Palestine, Texas</b>					
52582	Palestine Blue Star 4-8-10 Guarantee.....	4.00	8.00	10.00	30.20
	Analysis.....	3.92	8.51	9.22	29.76
52579	Palestine Blue Star 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
52783	Analysis.....	4.16	11.45	4.07	28.20
52861	Analysis.....	4.33	12.00	4.27	29.49
52879	Analysis.....	4.04	11.35	4.26	28.01
52942	Analysis.....	4.06	11.74	3.84	28.05
52984	Analysis.....	4.24	11.62	4.03	28.55
53283	Analysis.....	4.11	11.58	4.16	28.34
53304	Analysis.....	4.38	11.40	4.51	29.15
	Analysis.....	4.16	12.04	4.05	28.89
52851	Palestine Blue Star 6-8-4 Guarantee.....	6.00	8.00	4.00	28.40
	Analysis.....	5.61	8.80	3.51	27.88
52580	Palestine Blue Star 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
52774	Analysis.....	5.79	9.55	6.79	32.83
	Analysis.....	6.19	9.89	6.88	34.30

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Palestine Oil Mill &amp; Fertilizer Works, Palestine, Texas</b>				
	—Continued.				
	Palestine Blue Star 6-10-7 Fertilizer—Continued—				
	Guarantee.....	6.00	10.00	7.00	34.10
52980	Analysis.....	6.14	10.28	7.24	35.04
52988	Analysis.....	6.20	10.03	6.85	34.46
53305	Analysis.....	6.08	10.28	6.38	33.95
	Palestine Blue Star 6-12-6 Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
52943	Analysis.....	6.37	11.75	6.04	36.03
	Palestine Cotton Producer Guarantee.....	3.00	10.00	3.00	22.50
52581	Analysis.....	2.90	10.19	3.48	23.02
52845	Analysis.....	3.46	10.30	3.55	24.57
52850	Analysis.....	3.03	10.38	3.24	23.29
52880	Analysis.....	3.06	10.26	3.20	23.17
	Palestine Twenty Per Cent Superphosphate Guarantee.....	20.00			24.00
52840	Analysis.....	20.57			24.68
52985	Analysis.....	20.85			25.02
53303	Analysis.....	20.48			24.58
	Palestine Tomato Special Guarantee.....	4.00	8.00	6.00	25.80
52944	Analysis.....	4.27	8.05	5.66	26.14
52952	Analysis.....	4.22	7.76	5.46	25.45
52960	Analysis.....	4.06	8.55	5.73	26.30
53306	Analysis.....	4.24	7.76	5.17	25.18
53411	Analysis.....	4.06	8.04	5.54	25.48
	Palestine Upland Cotton Guarantee.....	4.00	8.00	4.00	23.60
52599	Analysis.....	4.14	8.00	4.06	24.01
52784	Analysis.....	4.06	7.62	4.13	23.42
52846	Analysis.....	4.10	7.81	4.24	23.87
52849	Analysis.....	4.04	8.12	4.10	23.95
52941	Analysis.....	4.28	8.15	4.03	24.48
52959	Analysis.....	4.21	8.26	4.11	24.53
53302	Analysis.....	3.97	8.58	4.19	24.44
53318	Analysis.....	4.06	8.29	4.09	24.19
53433	Analysis.....	3.96	8.14	4.15	23.84
	<b>Pate Bros. Fertilizer Works, Sulphur Springs, Texas</b>				
	Pate's 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
53076	Analysis.....	3.26	10.23	3.27	23.70
	Pate's 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
52677	Analysis.....	4.47	8.25	4.14	25.18
52686	Analysis.....	4.34	8.17	4.12	24.75
53096	Analysis.....	4.20	8.50	4.11	24.80
	Pate's 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
52648	Analysis.....	4.11	9.10	6.32	27.73
52669	Analysis.....	4.29	8.53	6.54	27.78
52685	Analysis.....	4.27	8.22	6.03	26.74
53075	Analysis.....	4.29	8.05	6.06	26.63
53095	Analysis.....	4.22	8.18	6.18	26.75
	Pate's 4-8-10 Guarantee.....	4.00	8.00	10.00	30.20
52671	Analysis.....	4.08	8.79	10.50	31.89
	Pate's 6-8-4 Guarantee.....	6.00	8.00	4.00	28.40
52672	Analysis.....	6.29	8.40	4.02	29.60
	Pate's 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
52678	Analysis.....	6.36	10.31	7.29	35.65
	Pate's 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
52673	Analysis.....	6.39	12.55	6.32	37.35
	Pate's Red Star Brand 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
53136	Analysis.....	4.32	8.05	3.85	24.27
53425	Analysis.....	4.14	8.52	4.34	24.93
53463	Analysis.....	4.38	9.95	4.22	27.09
53471	Analysis.....	4.34	8.64	4.30	25.52
	Pate's Red Star Brand 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
53426	Analysis.....	4.26	8.28	5.58	26.30
53462	Analysis.....	4.21	8.87	5.88	27.21
53472	Analysis.....	4.27	7.65	5.58	25.57

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Pate Bros. Fertilizer Works, Sulphur Springs, Texas</b>				
	—Continued.				
	Pate's Red Star Brand 4-8-6 Fertilizer—Continued—				
	Guarantee.....	4.00	8.00	6.00	25.80
53478	Analysis.....	4.24	8.07	5.09	25.46
	Pate's Red Star Brand 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
53480	Analysis.....	6.18	9.87	7.42	34.83
	Pate's Red Star Brand 6-12-6 Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
53481	Analysis.....	6.23	12.75	5.80	36.63
	<b>Pittsburg Cotton Oil Company, Pittsburg, Texas</b>				
	Double Circle Fertilizer 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
53436	Analysis.....	3.15	9.47	1.02	20.04
	Double Circle Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
53129	Analysis.....	3.57	8.12	4.62	23.39
53130	Analysis.....	4.17	8.08	3.75	23.84
53141	Analysis.....	4.36	8.51	4.05	25.13
53434	Analysis.....	4.15	8.44	4.00	24.49
53451	Analysis.....	4.24	8.76	4.00	25.09
	Double Circle Fertilizer 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
52652	Analysis.....	4.08	8.15	6.09	26.27
53080	Analysis.....	4.48	8.57	5.74	27.34
53082	Analysis.....	4.30	8.46	5.11	26.09
53128	Analysis.....	3.83	8.75	6.54	26.88
53142	Analysis.....	4.41	8.76	6.10	27.80
53435	Analysis.....	4.05	9.13	5.79	27.05
	Double Circle Fertilizer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
52661	Analysis.....	3.94	11.84	4.30	28.40
53081	Analysis.....	3.89	12.02	3.87	28.02
53338	Analysis.....	3.97	11.72	4.03	28.02
	<b>M. R. Porter Company, Hernando, Florida</b>				
	"Calphos" Brand Soft Phosphate with Colloidal Clay				
	Guarantee.....		*22.00		6.60
53224	Analysis.....		*23.75		7.15
	<b>Port Fertilizer Company, Los Fresnos, Texas</b>				
	Citrus Special Brand Fertilizer Guarantee.....	5.00	15.00	5.00	35.50
52499	Analysis.....	5.33	13.85	5.01	34.92
	<b>The Pulverized Manure Company, Union Stock Yards, Chicago, Illinois</b>				
	Wizard Brand Pulverized Sheep Manure Guarantee.....	2.00	1.00	2.00	8.20
52521	Analysis.....	2.04	1.41	2.01	8.80
52831	Analysis.....	1.89	2.45	3.81	11.67
	<b>San Benito Feed Company, San Benito, Texas</b>				
	Keystone Brand 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
52498	Analysis.....	5.94	8.77	7.80	33.36
	<b>L. W. Shaffer Company, San Juan, Texas</b>				
	Magic Valley Brand 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
52479	Analysis.....	4.64	8.24	6.64	28.33
52480	Analysis.....	4.11	7.87	7.42	27.46
	<b>Thos. Self, Crockett, Texas</b>				
	Crockett 3-10-3 Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
52940	Analysis.....	3.06	10.33	3.21	23.27
	Crockett 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
52561	Analysis.....	4.01	7.77	4.22	23.58
52939	Analysis.....	4.06	8.02	3.67	23.41
53289	Analysis.....	3.91	7.94	4.01	23.32
	Crockett 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
53290	Analysis.....	4.41	8.52	5.82	27.20
	Crockett 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
52560	Analysis.....	4.24	11.60	4.27	28.80
52938	Analysis.....	4.01	11.72	4.26	28.37
53288	Analysis.....	3.85	11.78	4.26	28.07
	Crockett 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
52937	Analysis.....	6.02	10.31	5.86	33.27
53291	Analysis.....	5.79	10.02	6.71	33.30
	Crockett 20% Super-Phosphate Guarantee.....		20.00		24.00
52562	Analysis.....		19.66		23.59

\*Total phosphoric acid



Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Shreveport Fertilizer Works, Shreveport, Louisiana</b>					
52746	Lion 3-10-3 Blood and Bone Guarantee	3.00	10.00	3.00	22.50
	Analysis	3.94	8.63	3.13	23.26
52755	Lion 3-10-3 Meal Formulae Guarantee	3.00	10.00	3.00	22.50
	Analysis	3.73	10.35	3.66	25.40
53071	Lion 4-8-4 Black Boy Guarantee	4.00	8.00	4.00	23.60
	Analysis	4.10	8.85	3.88	24.73
52659	Lion 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	23.60
	Analysis	4.01	12.13	3.60	23.14
52702	Analysis	4.22	7.80	2.99	22.78
53046	Analysis	3.68	7.33	3.20	21.15
53137	Analysis	4.11	8.07	4.00	23.94
53191	Analysis	3.85	8.43	3.77	23.51
53205	Analysis	4.10	7.84	4.34	24.02
53366	Analysis	4.27	8.43	3.80	24.55
53405	Analysis	4.02	8.35	3.36	23.37
53447	Analysis	4.08	8.26	4.00	24.10
53450	Analysis	3.92	8.80	4.24	24.63
53455	Analysis	4.05	8.79	3.80	24.45
53466	Analysis	4.45	9.88	3.37	26.25
52591	Lion 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	25.80
	Analysis	4.14	8.02	5.71	25.84
52598	Analysis	4.48	9.03	6.04	28.23
52616	Analysis	4.18	8.43	5.84	26.57
52658	Analysis	3.95	8.95	5.25	26.00
52676	Analysis	4.50	8.02	6.32	27.37
52979	Analysis	4.36	10.28	5.36	28.70
53028	Analysis	3.95	8.51	6.04	26.33
53073	Analysis	4.07	8.07	5.05	25.01
53103	Analysis	4.39	8.09	5.62	26.43
53118	Analysis	4.41	8.01	6.15	26.96
53133	Analysis	4.25	8.05	5.59	26.01
53204	Analysis	4.00	7.82	5.31	24.82
53316	Analysis	4.30	8.05	5.30	25.81
53367	Analysis	4.09	8.33	5.82	26.22
53441	Analysis	3.85	8.47	5.68	25.65
52617	Lion 4-10-0 Non Potassic Guarantee	4.00	10.00	.....	21.60
	Analysis	5.36	10.23	.....	25.14
52703	Lion 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	28.40
	Analysis	4.43	12.12	4.18	29.77
52925	Analysis	4.34	11.66	4.29	29.13
53047	Analysis	4.79	11.41	4.04	29.63
53192	Analysis	4.10	12.44	3.69	28.83
52926	Lion 6-8-4 Fertilizer Guarantee	6.00	8.00	4.00	28.40
	Analysis	6.25	8.70	1.81	27.43
53460	Analysis	6.29	8.99	1.37	27.40
52723	Lion 6-9-3 Fertilizer Guarantee	6.00	9.00	3.00	28.50
	Analysis	4.95	10.30	3.30	27.87
52660	Lion 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	34.10
	Analysis	5.86	11.80	6.20	35.04
53006	Analysis	6.22	10.66	6.45	34.82
53138	Analysis	6.24	10.03	6.79	34.49
53400	Analysis	6.16	11.16	6.15	34.94
53442	Analysis	5.76	10.67	6.39	33.65
52590	Lion 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	35.40
	Analysis	6.26	11.90	6.14	36.05
52647	Analysis	6.27	12.21	5.85	36.14
52730	Longhorn 3-10-3 Fertilizer Guarantee	3.00	10.00	3.00	22.50
	Analysis	3.13	10.17	3.22	23.25
52600	Longhorn 3-10-3 Meal Formulae Guarantee	3.00	10.00	3.00	22.50
	Analysis	3.62	9.64	3.22	23.80
52964	Analysis	3.06	9.81	3.27	22.71

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Shreveport Fertilizer Works, Shreveport, Louisiana</b>				
	—Continued.				
	Longhorn 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
52563	Analysis.....	4.02	7.21	4.10	22.81
52601	Analysis.....	4.14	8.20	3.74	23.89
52615	Analysis.....	4.17	8.58	3.71	24.39
52683	Analysis.....	4.12	8.03	3.59	23.48
52931	Analysis.....	4.18	9.05	3.56	24.81
52965	Analysis.....	4.13	8.41	3.66	24.03
53189	Analysis.....	4.24	8.58	1.43	22.05
	Longhorn 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
52564	Analysis.....	4.24	7.36	6.59	26.26
52614	Analysis.....	4.62	8.35	6.28	28.02
52719	Analysis.....	4.15	8.09	3.23	23.22
52963	Analysis.....	4.49	8.12	5.92	27.03
53332	Analysis.....	4.26	9.04	5.58	27.21
	Longhorn 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
52716	Analysis.....	4.46	12.26	3.41	29.16
52731	Analysis.....	4.06	12.45	4.10	29.19
52777	Analysis.....	4.43	12.25	3.51	29.19
52930	Analysis.....	4.43	12.15	3.59	29.16
52999	Analysis.....	4.15	12.65	3.98	29.52
53188	Analysis.....	4.06	12.49	4.04	29.17
53196	Analysis.....	4.14	12.03	3.72	28.47
53383	Analysis.....	4.26	11.83	4.07	28.90
	Longhorn 6-9-3 Fertilizer Guarantee.....	6.00	9.00	3.00	28.50
52737	Analysis.....	6.34	9.27	3.20	29.86
53018	Analysis.....	6.65	8.86	3.35	30.28
	Longhorn 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
52565	Analysis.....	5.78	10.75	6.78	34.23
52597	Analysis.....	6.36	10.88	6.59	35.57
53017	Analysis.....	6.53	10.03	6.55	34.92
53384	Analysis.....	6.14	10.23	6.70	34.39
	Longhorn 6-12-6 Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
52738	Analysis.....	6.52	11.78	6.20	36.61
	Longhorn 20% Superphosphate Guarantee.....	.....	20.00	.....	24.00
53178	Analysis.....	.....	21.31	.....	25.57
	<b>Swift &amp; Company Fertilizer Works, Harvey and Shreveport, La., and Houston, Texas</b>				
	Muriate of Potash 50% Guarantee.....	.....	.....	50.00	55.00
52422	Analysis.....	.....	.....	48.34	53.17
	Nitrate of Soda 16% Guarantee.....	16.00	.....	.....	38.40
53328	Analysis.....	16.42	.....	.....	39.41
	Swift's PH7 6-8-4 Guarantee.....	6.00	8.00	4.00	28.40
52424	Analysis.....	5.84	8.56	4.11	28.81
52435	Analysis.....	5.78	8.60	4.05	28.65
52452	Analysis.....	6.02	8.02	4.17	28.66
52461	Analysis.....	6.08	7.79	4.17	28.53
52468	Analysis.....	5.99	7.60	4.20	28.12
52493	Analysis.....	5.95	8.12	4.11	28.54
52533	Analysis.....	5.97	8.09	4.51	28.55
52576	Analysis.....	5.96	8.17	4.04	28.54
52583	Analysis.....	5.94	8.18	4.11	28.60
52607	Analysis.....	6.05	8.08	4.19	28.83
52628	Analysis.....	5.95	8.21	4.03	28.56
52674	Analysis.....	6.03	8.12	4.10	28.72
52696	Analysis.....	6.08	8.04	4.26	28.93
52708	Analysis.....	5.82	8.14	4.17	28.33
52834	Analysis.....	6.08	7.77	4.28	28.62
52852	Analysis.....	5.94	8.23	4.12	28.67
52914	Analysis.....	6.01	8.00	4.05	28.48
52922	Analysis.....	6.02	7.78	4.03	28.22
52947	Analysis.....	5.79	8.31	4.11	28.39

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Swift & Company Fertilizer Works, Harvey and Shreveport, La., and Houston, Texas—Continued				
	Swift's PH7 6-8-4—Continued—Guarantee.....	6.00	8.00	4.00	28.40
53024	Analysis.....	5.95	7.71	4.05	27.99
53066	Analysis.....	5.80	7.71	4.21	27.80
53093	Analysis.....	6.02	8.10	4.20	28.79
53135	Analysis.....	6.10	7.47	4.24	28.26
53151	Analysis.....	5.86	8.01	4.09	28.17
53162	Analysis.....	5.51	8.60	4.17	28.13
53257	Analysis.....	5.66	8.04	4.10	27.74
53293	Analysis.....	5.78	8.13	4.23	28.28
53412	Analysis.....	6.06	7.85	4.11	28.48
	Swift's Raw Bone Meal Fertilizer Guarantee.....	3.70	*22.00	.....	26.48
52486	Analysis.....	3.56	*23.06	.....	26.99
	Swift's Red Steer 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
52859	Analysis.....	3.30	10.91	2.74	24.02
52867	Analysis.....	3.02	10.03	3.18	22.79
52886	Analysis.....	2.72	9.01	3.97	21.71
52921	Analysis.....	3.51	11.35	2.52	24.81
53001	Analysis.....	3.05	10.08	3.11	22.84
53067	Analysis.....	2.86	10.90	3.45	23.74
	Swift's Red Steer 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
52608	Analysis.....	4.06	7.43	4.04	23.10
52766	Analysis.....	3.94	8.42	4.35	24.35
52843	Analysis.....	4.02	7.79	4.37	23.81
52906	Analysis.....	4.14	8.70	4.67	25.52
52920	Analysis.....	4.09	8.20	4.11	24.18
52934	Analysis.....	4.02	7.45	4.36	23.39
52976	Analysis.....	3.98	8.25	4.01	23.86
53044	Analysis.....	3.97	7.38	4.24	23.05
53087	Analysis.....	3.98	7.54	4.01	23.01
53150	Analysis.....	4.02	7.57	4.02	23.15
53258	Analysis.....	3.80	8.05	3.76	22.92
53294	Analysis.....	3.99	8.15	3.77	23.51
53297	Analysis.....	3.87	8.74	4.04	24.22
53356	Analysis.....	3.92	8.13	4.11	23.69
53377	Analysis.....	4.09	7.95	4.03	23.79
53404	Analysis.....	4.16	8.07	4.16	24.24
53413	Analysis.....	4.23	7.70	4.13	23.93
53423	Analysis.....	3.97	7.55	3.98	22.97
	Swift's Red Steer 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
52545	Analysis.....	3.76	8.41	5.41	25.06
52577	Analysis.....	3.78	8.82	5.57	25.78
53298	Analysis.....	3.96	8.61	5.30	25.66
	Swift's Red Steer 4-8-10 Guarantee.....	4.00	8.00	10.00	30.20
52916	Analysis.....	3.97	8.05	9.49	29.63
	Swift's Red Steer 4-10-0 Guarantee.....	4.00	10.00	.....	21.60
52471	Analysis.....	3.89	9.56	.....	20.81
	Swift's Red Steer 4-10-7 Guarantee.....	4.00	10.00	7.00	29.30
52546	Analysis.....	4.26	10.62	6.18	29.76
	Swift's Red Steer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
52439	Analysis.....	4.09	11.87	4.24	28.72
52467	Analysis.....	3.93	11.84	4.33	28.40
52473	Analysis.....	3.92	12.19	4.30	28.77
52519	Analysis.....	3.88	11.57	4.05	27.65
52550	Analysis.....	4.29	10.56	4.06	27.44
52767	Analysis.....	3.96	12.13	4.29	28.78
52792	Analysis.....	4.06	11.86	4.04	28.41
52797	Analysis.....	4.01	12.18	4.08	28.73
52835	Analysis.....	4.29	11.31	4.22	28.51
52853	Analysis.....	3.94	12.22	4.04	28.56
52860	Analysis.....	4.33	11.94	4.36	29.52

\*Total phosphoric acid

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Swift &amp; Company Fertilizer Works, Harvey and Shreveport, La., and Houston, Texas—Continued</b>				
	Swift's Red Steer 4-12-4—Continued—Guarantee.....	4.00	12.00	4.00	28.40
52866	Analysis.....	4.08	11.48	4.14	28.12
52948	Analysis.....	3.97	11.27	4.03	27.48
53149	Analysis.....	4.22	10.62	4.23	27.52
53280	Analysis.....	4.14	13.18	3.83	29.97
53327	Analysis.....	4.19	11.34	4.43	28.54
53335	Analysis.....	4.19	10.98	4.47	28.16
53339	Analysis.....	4.37	11.21	4.21	28.57
	Swift's Red Steer 5-15-5 Guarantee.....	5.00	15.00	5.00	35.50
52462	Analysis.....	5.08	14.58	5.12	35.32
52483	Analysis.....	4.96	14.72	4.90	34.95
	Swift's Red Steer 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
52913	Analysis.....	4.45	11.77	4.38	29.62
	Swift's Red Steer 6-9-3 Guarantee.....	6.00	9.00	3.00	28.50
52610	Analysis.....	6.15	9.40	3.41	29.79
53355	Analysis.....	5.86	8.96	3.27	28.41
	Swift's Red Steer 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
53317	Analysis.....	6.03	10.08	6.81	34.06
	Swift's Red Steer 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
52421	Analysis.....	6.08	12.04	6.26	35.93
52429	Analysis.....	6.04	12.45	6.50	36.59
52434	Analysis.....	5.99	11.79	6.44	35.61
52463	Analysis.....	6.33	11.84	6.20	36.22
52466	Analysis.....	6.06	12.00	6.22	35.78
52761	Analysis.....	6.23	12.13	6.33	36.47
52873	Analysis.....	5.74	12.58	5.62	35.06
52882	Analysis.....	6.22	12.10	6.29	36.37
53259	Analysis.....	6.02	11.33	4.98	33.53
	Swift's Red Steer 10-20-10 Guarantee.....	10.00	20.00	10.00	59.00
52451	Analysis.....	10.48	19.07	10.66	59.76
52472	Analysis.....	9.74	19.32	10.14	57.71
	Swift's Red Steer 20% Superphosphate Guarantee.....	20.00	.....	.....	24.00
52868	Analysis.....	20.90	.....	.....	25.08
52885	Analysis.....	20.69	.....	.....	24.83
	Swift's Red Steer Tomato Grower 4-8-6 Guarantee.....	4.00	8.00	6.00	28.50
52629	Analysis.....	3.69	7.89	6.13	25.71
52689	Analysis.....	4.08	7.71	6.03	25.67
52695	Analysis.....	4.23	8.00	6.04	26.39
53094	Analysis.....	4.10	8.03	6.10	26.19
	Swift's Red Steer Tomato Grower 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
52609	Analysis.....	6.00	9.98	6.65	33.70
52905	Analysis.....	6.00	10.21	6.60	33.91
53045	Analysis.....	5.95	9.18	7.15	33.17
53057	Analysis.....	5.70	10.15	6.60	33.12
53340	Analysis.....	5.90	9.97	7.25	34.10
	Vigoro Guarantee.....	4.00	12.00	4.00	28.40
52427	Analysis.....	4.41	11.70	4.52	29.59
52477	Analysis.....	4.36	11.53	4.59	29.35
52478	Analysis.....	4.37	11.06	4.50	28.71
52494	Analysis.....	4.39	12.12	4.35	29.87
52896	Analysis.....	4.33	11.13	4.14	28.30
52904	Analysis.....	4.38	10.18	4.35	27.52
53419	Analysis.....	5.02	10.66	4.79	30.11
	<b>Temple Cotton Oil Company, North Little Rock, Ark.</b>				
	Quapaw 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
53106	Analysis.....	3.08	9.33	3.06	21.96
53114	Analysis.....	3.28	9.09	3.29	22.40
53449	Analysis.....	2.61	10.26	2.81	21.66
	Quapaw 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
52690	Analysis.....	4.02	7.73	4.04	23.37
53105	Analysis.....	4.04	7.62	4.04	23.28
53113	Analysis.....	3.98	7.67	3.62	22.73

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Temple Cotton Oil Company, North Little Rock, Ark.</b>					
—Continued.					
	Quapaw 4-8-4—Continued—Guarantee.....	4.00	8.00	4.00	23.60
53125	Analysis.....	4.02	7.77	3.86	23.22
53448	Analysis.....	3.76	8.37	4.27	23.76
53464	Analysis.....	3.78	8.41	4.12	23.69
	Quapaw 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
52680	Analysis.....	4.04	8.22	5.72	25.85
52691	Analysis.....	3.93	7.58	5.21	24.26
52692	Analysis.....	4.02	7.63	6.06	25.48
53112	Analysis.....	3.97	7.67	5.62	24.91
53124	Analysis.....	3.99	7.65	6.03	25.39
53456	Analysis.....	4.02	8.37	5.73	25.99
	Quapaw 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
53457	Analysis.....	6.02	9.62	6.80	33.47
	Quapaw 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
52681	Analysis.....	4.90	12.04	5.34	32.08
<b>Texas Farm Products Company, Nacogdoches, Texas</b>					
	Lone Star Brand 3-10-3 Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
52728	Analysis.....	3.22	10.13	3.01	23.20
52911	Analysis.....	3.36	9.62	3.06	22.97
53324	Analysis.....	3.04	9.73	3.17	22.47
53380	Analysis.....	3.11	10.32	3.29	23.46
	Lone Star Brand 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
52558	Analysis.....	3.89	8.23	4.45	24.12
52578	Analysis.....	4.04	8.11	5.57	25.56
52701	Analysis.....	4.01	7.65	4.59	23.85
52729	Analysis.....	4.05	8.05	4.81	24.67
52791	Analysis.....	4.11	8.02	4.63	24.57
52954	Analysis.....	4.08	7.73	3.59	23.02
52958	Analysis.....	3.85	7.67	4.10	22.95
52972	Analysis.....	3.91	7.61	4.02	22.93
52981	Analysis.....	4.24	7.98	3.66	23.79
53031	Analysis.....	4.02	7.52	4.09	23.17
53037	Analysis.....	4.23	8.00	3.74	23.86
53163	Analysis.....	4.19	8.59	4.06	24.84
53177	Analysis.....	3.94	7.46	4.04	22.85
53193	Analysis.....	3.91	7.15	3.81	22.15
53287	Analysis.....	3.96	7.80	4.04	23.30
53309	Analysis.....	4.06	8.19	4.17	24.16
53325	Analysis.....	4.08	7.67	3.90	23.28
53369	Analysis.....	4.06	8.02	3.83	23.57
53382	Analysis.....	4.08	8.04	3.89	23.72
53386	Analysis.....	4.09	8.30	3.86	24.03
53389	Analysis.....	4.22	8.09	3.82	24.04
53402	Analysis.....	3.93	8.02	3.95	23.46
	Lone Star Brand 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
52587	Analysis.....	4.07	8.07	5.79	25.82
52778	Analysis.....	4.09	7.95	5.78	25.72
52806	Analysis.....	4.19	8.02	6.02	26.30
52811	Analysis.....	3.88	7.46	5.63	24.45
52912	Analysis.....	4.15	7.75	6.01	25.87
53347	Analysis.....	4.12	8.00	5.83	25.90
53387	Analysis.....	3.95	7.76	6.04	25.43
	Lone Star Brand 4-10-7 Fertilizer Guarantee.....	4.00	10.00	7.00	29.30
53197	Analysis.....	4.33	10.11	6.73	29.92
	Lone Star Brand 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
52559	Analysis.....	4.06	12.09	4.98	29.73
52714	Analysis.....	4.12	11.75	4.29	28.71
52727	Analysis.....	4.10	11.76	4.05	28.41
52765	Analysis.....	4.19	11.73	4.41	28.99
52768	Analysis.....	4.32	11.91	4.22	29.30



Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per ton	Valuation found, per ton
<b>Texas Farm Products Company, Nacogdoches, Texas</b>					
—Continued.					
Lone Star Brand 4-12-4 Fertilizer—Continued—					
	Guarantee.....	4.00	12.00	4.00	28.40
52770	Analysis.....	4.12	12.03	4.19	28.94
52855	Analysis.....	4.22	12.05	4.98	30.07
52910	Analysis.....	4.25	12.17	4.12	29.33
52946	Analysis.....	4.13	12.02	4.22	28.97
52955	Analysis.....	4.01	11.98	4.10	28.51
52956	Analysis.....	4.34	12.02	4.01	29.25
53007	Analysis.....	4.12	12.14	4.11	28.98
53038	Analysis.....	4.08	11.64	4.27	28.46
53179	Analysis.....	3.97	12.04	4.09	28.48
53286	Analysis.....	4.14	12.01	4.10	28.86
53295	Analysis.....	4.15	12.07	4.02	28.86
53333	Analysis.....	4.19	12.01	4.12	29.00
53349	Analysis.....	3.81	11.27	3.94	26.99
53381	Analysis.....	4.08	11.63	3.67	27.79
Lone Star Brand 6-9-3 Fertilizer Guarantee.....					
	Guarantee.....	6.00	9.00	3.00	28.50
52970	Analysis.....	6.13	9.30	2.75	28.90
53379	Analysis.....	6.00	8.77	3.01	28.23
53388	Analysis.....	6.10	9.03	3.18	28.98
Lone Star Brand 6-10-7 Fertilizer Guarantee.....					
	Guarantee.....	6.00	10.00	7.00	34.10
52586	Analysis.....	5.89	10.17	7.03	34.07
52726	Analysis.....	5.96	10.05	7.11	34.18
52764	Analysis.....	6.01	10.35	6.71	34.22
52769	Analysis.....	6.02	10.25	7.07	34.53
52945	Analysis.....	5.83	10.21	6.83	33.75
52953	Analysis.....	5.85	10.24	6.76	33.77
52974	Analysis.....	5.94	9.96	6.90	33.80
52982	Analysis.....	5.87	9.98	7.01	33.78
53296	Analysis.....	5.75	10.05	6.75	33.29
53348	Analysis.....	5.97	9.82	6.68	33.03
Lone Star Brand 6-12-6 Fertilizer Guarantee.....					
	Guarantee.....	6.00	12.00	6.00	35.40
52736	Analysis.....	6.12	12.12	6.08	35.92
52790	Analysis.....	6.17	11.63	5.97	35.34
52998	Analysis.....	6.15	11.87	6.04	35.64
Lone Star Brand 10-10-0 Fertilizer Guarantee.....					
	Guarantee.....	10.00	10.00	.....	36.00
53310	Analysis.....	9.54	10.39	.....	35.37
<b>Tri-State Fertilizer &amp; Lumber Company, Shreveport, La.</b>					
Red Diamond 3-10-3 Fertilizer Guarantee.....					
	Guarantee.....	3.00	10.00	3.00	22.50
52715	Analysis.....	3.54	10.42	3.97	25.37
53393	Analysis.....	3.91	11.04	4.83	27.94
Red Diamond 4-8-4 Fertilizer Guarantee.....					
	Guarantee.....	4.00	8.00	4.00	23.60
52592	Analysis.....	4.24	8.65	4.73	25.76
52645	Analysis.....	4.36	8.96	4.47	26.13
52709	Analysis.....	4.70	8.37	4.59	26.37
52787	Analysis.....	4.30	7.60	4.17	24.03
53072	Analysis.....	4.42	9.05	4.46	26.38
53147	Analysis.....	5.16	9.05	4.45	28.14
53430	Analysis.....	4.14	8.57	3.27	23.82
Red Diamond 4-8-6 Fertilizer Guarantee.....					
	Guarantee.....	4.00	8.00	6.00	25.80
53394	Analysis.....	6.62	10.77	5.91	35.31
Red Diamond 4-8-10 Fertilizer Guarantee.....					
	Guarantee.....	4.00	8.00	10.00	30.20
53431	Analysis.....	4.08	8.53	10.06	31.10
Red Diamond 4-12-4 Fertilizer Guarantee.....					
	Guarantee.....	4.00	12.00	4.00	28.40
52646	Analysis.....	4.55	11.46	5.27	30.47
Red Diamond 6-8-4 Fertilizer Guarantee.....					
	Guarantee.....	6.00	8.00	4.00	28.40
53322	Analysis.....	6.75	7.07	4.97	30.15
Red Diamond 6-10-7 Fertilizer Guarantee.....					
	Guarantee.....	6.00	10.00	7.00	34.10
53043	Analysis.....	6.74	10.00	7.15	36.05

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Tyler Fertilizer Company, Tyler, Texas.</b>					
	Heart Brand Fertilizer No. 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
52817	Analysis.....	4.48	7.04	4.03	23.63
53353	Analysis.....	3.90	8.98	2.99	23.43
	Heart Brand Fertilizer No. 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
52816	Analysis.....	3.67	9.44	6.31	27.08
53029	Analysis.....	3.65	8.24	7.03	26.38
	Heart Brand Fertilizer No. 6-9-3 Guarantee.....	6.00	9.00	3.00	28.50
52815	Analysis.....	6.10	9.40	3.32	29.57
	Heart Brand Fertilizer No. 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
52623	Analysis.....	5.39	11.44	5.09	32.81
52823	Analysis.....	6.24	9.40	5.62	32.44
	Heart Brand Fertilizer No. 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
52624	Analysis.....	5.53	12.00	5.14	33.32
	Heart Brand Fertilizer No. 10-0-10 Guarantee.....	10.00	.....	10.00	35.00
53354	Analysis.....	9.53	.....	9.19	32.98
<b>United Chemical Company, Dallas, Texas</b>					
	King Cotton Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
53068	Analysis.....	4.04	8.13	4.19	24.07
53084	Analysis.....	4.08	8.23	4.76	24.91
53176	Analysis.....	4.33	8.42	4.15	25.06
53299	Analysis.....	4.06	7.50	4.07	23.22
53357	Analysis.....	4.10	8.25	4.43	24.61
53398	Analysis.....	4.18	8.15	4.41	24.66
53438	Analysis.....	4.09	8.29	4.17	24.36
	Sunset Brand Fertilizer 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
52977	Analysis.....	3.24	10.05	3.11	23.26
53003	Analysis.....	3.06	9.16	3.51	22.19
	Sunset Brand Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
52643	Analysis.....	4.02	8.04	4.31	24.04
52657	Analysis.....	4.21	8.47	4.37	25.07
52665	Analysis.....	4.17	8.36	4.04	24.48
52740	Analysis.....	4.12	8.06	4.11	24.08
52773	Analysis.....	4.18	8.26	4.13	24.48
52793	Analysis.....	4.02	7.57	4.11	23.25
52796	Analysis.....	4.02	7.55	4.58	23.75
52978	Analysis.....	4.14	8.21	3.82	23.99
53010	Analysis.....	4.17	8.19	4.17	24.43
53157	Analysis.....	4.07	7.63	4.08	23.42
53432	Analysis.....	4.04	8.10	4.02	23.84
	Sunset Brand Fertilizer 4-8-10 Guarantee.....	4.00	8.00	10.00	30.20
52918	Analysis.....	4.24	8.33	9.02	30.10
	Sunset Brand Fertilizer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
52739	Analysis.....	4.12	12.24	4.32	29.33
52772	Analysis.....	4.16	11.89	4.23	28.90
52847	Analysis.....	4.14	12.09	4.02	28.87
53158	Analysis.....	4.08	12.01	4.02	28.62
53161	Analysis.....	4.09	11.87	4.16	28.64
53206	Analysis.....	4.19	11.81	4.22	28.87
53214	Analysis.....	4.29	11.79	4.14	28.89
	Sunset Brand Fertilizer 6-8-4 Guarantee.....	6.00	8.00	4.00	28.40
53039	Analysis.....	5.91	8.04	4.26	28.52
	Sunset Brand Fertilizer 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
52771	Analysis.....	6.22	10.63	4.49	32.63
52919	Analysis.....	5.95	9.81	7.45	34.25
53009	Analysis.....	6.02	9.80	7.65	34.63
	Sunset Brand Fertilizer 10-0-10 Guarantee.....	10.00	.....	10.00	35.00
53313	Analysis.....	10.36	.....	10.48	36.39
	Sunset Brand Fertilizer "Truck and Fruit Special" 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
52656	Analysis.....	4.10	8.15	6.28	26.53
52664	Analysis.....	3.97	8.34	6.05	26.20

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	per cent Potash,	Valuation found, per ton
	United Chemical Company, Dallas, Texas—Continued.				
	Sunset Brand Fertilizer "Truck and Fruit Special"				
	4-8-6—Continued— Guarantee.....	4.00	8.00	6.00	52.80
52679	Analysis.....	4.08	8.11	5.40	25.46
52848	Analysis.....	4.11	8.34	5.74	26.18
53040	Analysis.....	4.01	7.85	6.32	25.99
53069	Analysis.....	4.19	7.82	5.67	25.68
53070	Analysis.....	4.02	8.16	6.21	26.27
53083	Analysis.....	4.04	8.35	5.73	26.02
	"United Plantfood" 0-12-4 "Rice Special" Guarantee.....	12.00	4.00	4.00	18.80
53222	Analysis.....	12.41	4.75	20.12	22.50
	"United Plantfood" Fertilizer 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
52699	Analysis.....	3.27	9.84	3.17	23.15
	"United Plantfood" Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
52630	Analysis.....	4.02	8.13	4.22	24.05
52641	Analysis.....	3.94	8.49	4.18	24.25
52758	Analysis.....	4.01	7.93	4.04	23.58
52795	Analysis.....	4.12	8.28	4.06	24.30
53002	Analysis.....	4.09	8.46	4.08	24.46
53027	Analysis.....	4.08	7.92	4.08	23.78
53052	Analysis.....	4.11	7.93	4.21	24.01
53061	Analysis.....	4.29	8.04	4.10	24.26
53401	Analysis.....	4.10	8.26	4.24	24.41
53414	Analysis.....	4.01	8.09	4.18	23.93
53458	Analysis.....	4.19	8.80	4.00	25.02
	"United Plantfood" Fertilizer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
52700	Analysis.....	4.24	12.02	4.10	29.11
52779	Analysis.....	4.15	12.01	4.04	28.81
52822	Analysis.....	4.32	11.47	4.18	28.73
52856	Analysis.....	4.21	12.26	4.18	29.41
52863	Analysis.....	4.17	11.73	4.38	28.91
52872	Analysis.....	4.17	11.68	4.37	28.84
52962	Analysis.....	4.20	12.13	3.73	28.74
53212	Analysis.....	4.26	12.01	4.35	29.42
53279	Analysis.....	4.10	12.17	4.26	29.13
53285	Analysis.....	4.24	12.45	4.28	29.83
53300	Analysis.....	4.26	12.39	4.20	29.71
	"United Plantfood" 4-12-4 "Rice Special" Guarantee.....	4.00	12.00	4.00	28.40
53218	Analysis.....	4.32	12.08	3.82	29.07
	"United Plantfood" Fertilizer 6-9-3 Guarantee.....	6.00	9.00	3.00	28.50
53358	Analysis.....	6.17	9.08	3.17	29.20
53397	Analysis.....	6.08	8.73	3.20	28.59
	"United Plantfood" Fertilizer 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
52936	Analysis.....	6.35	9.97	7.14	35.05
53062	Analysis.....	6.25	10.00	6.59	34.25
	"United Plantfood" Fertilizer 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
52595	Analysis.....	6.36	12.33	5.62	36.24
52757	Analysis.....	6.26	11.84	6.27	36.13
52839	Analysis.....	6.08	12.18	5.88	35.68
53051	Analysis.....	6.05	11.36	6.16	34.93
53415	Analysis.....	6.32	11.83	5.54	35.46
	"United Plantfood" Fertilizer "Rice Special" 4-10-0 Guarantee.....	4.00	10.00	.....	21.60
53219	Analysis.....	4.26	10.09	.....	22.33
53239	Analysis.....	4.08	10.46	.....	22.34
	"United Plantfood" Fertilizer Rice Special" 4-10-7 Guarantee.....	4.00	10.00	7.00	29.30
52833	Analysis.....	4.17	9.87	7.18	29.75
	"United Plantfood" Fertilizer Truck and Fruit Special 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
52631	Analysis.....	4.10	8.54	5.75	26.42
53119	Analysis.....	4.08	7.89	5.80	25.64
53275	Analysis.....	4.19	8.07	5.46	25.75

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	United Chemical Company, Dallas, Texas—Continued.				
52935	"United Plantfood" 18% Superphosphate Guarantee		18.00		21.60
53284	Analysis		18.48		22.18
	Analysis		19.56		23.47
52640	"United Plantfood" 20% Superphosphate Guarantee		20.00		24.00
	Analysis		20.44		24.53
	Virginia-Carolina Chemical Corporation, Shreveport, La.				
	Kainit 20% Guarantee			20.00	22.00
52549	Analysis			20.01	22.01
53269	Analysis			20.32	22.35
	V-C Blood, Bone and Potash Guarantee	3.00	10.00	3.00	22.50
52747	Analysis	3.26	10.15	3.18	23.50
53164	Analysis	3.26	9.68	3.07	22.82
53168	Analysis	3.21	10.02	2.95	22.97
53396	Analysis	3.09	10.45	3.25	23.54
53403	Analysis	3.26	10.48	3.30	24.03
	V-C Fertilizers 3-10-3 Guarantee	3.00	10.00	3.00	22.50
53004	Analysis	3.28	10.20	3.34	23.78
	V-C Fertilizers 4-8-4 Guarantee	4.00	8.00	4.00	23.60
52530	Analysis	3.78	7.54	4.52	23.09
52639	Analysis	4.20	8.51	4.28	25.00
52655	Analysis	4.08	8.05	4.14	24.00
52687	Analysis	4.20	8.47	4.38	25.06
52693	Analysis	3.91	8.30	4.19	23.95
52732	Analysis	4.19	8.44	4.32	24.94
52961	Analysis	4.17	8.10	4.02	24.15
52983	Analysis	3.82	8.36	4.19	23.81
53110	Analysis	3.95	7.75	4.23	23.43
53169	Analysis	3.94	7.94	4.11	23.51
53186	Analysis	3.96	8.04	4.07	23.63
53263	Analysis	4.01	8.02	4.12	23.77
53314	Analysis	3.90	8.24	3.85	23.49
53331	Analysis	4.00	8.27	4.10	24.03
53352	Analysis	3.93	8.16	4.29	23.94
53360	Analysis	3.92	8.40	4.18	24.09
	V-C Fertilizers 4-8-6 Guarantee	4.00	8.00	6.00	25.80
52684	Analysis	3.94	8.10	5.92	25.69
52694	Analysis	4.20	8.52	5.74	26.61
53026	Analysis	4.02	7.87	5.82	25.49
53085	Analysis	4.18	8.35	5.99	26.64
53123	Analysis	4.04	7.82	5.86	25.53
53144	Analysis	4.10	7.83	6.28	26.15
53267	Analysis	4.07	8.15	6.32	26.50
53359	Analysis	4.02	8.41	6.42	26.80
53453	Analysis	4.04	8.25	6.24	26.46
	V-C Fertilizers 4-12-4 Guarantee	4.00	12.00	4.00	28.40
52548	Analysis	4.26	12.70	4.70	30.63
52717	Analysis	4.24	11.77	4.37	29.11
52748	Analysis	4.16	12.50	4.11	29.50
52781	Analysis	4.24	12.68	4.04	29.84
52805	Analysis	4.21	12.68	4.55	30.33
53122	Analysis	4.19	12.45	4.39	29.83
53153	Analysis	4.18	11.74	4.59	29.17
53265	Analysis	4.05	12.80	4.40	29.92
53330	Analysis	4.07	13.07	4.02	29.87
53395	Analysis	4.02	12.40	4.41	29.38
	V-C Fertilizers 6-8-4 Guarantee	6.00	8.00	4.00	28.40
53143	Analysis	6.06	8.19	4.30	29.10
	V-C Fertilizers 6-9-3 Guarantee	6.00	9.00	3.00	28.50
53025	Analysis	5.91	9.53	3.27	29.22
53111	Analysis	5.77	9.44	3.32	28.83
53454	Analysis	5.83	9.68	3.84	29.83

Table 7. Analysis of commercial fertilizer, season 1937-38—Continued

Number Laboratory	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Virginia-Carolina Chemical Corporation, Shreveport, La. —Continued.				
	V-C Fertilizers 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
52460	Analysis.....	6.05	10.19	7.38	34.87
52594	Analysis.....	6.04	10.82	6.64	34.78
52602	Analysis.....	6.29	10.00	7.45	35.30
52750	Analysis.....	6.03	10.30	7.31	34.87
52782	Analysis.....	6.28	10.02	7.25	35.07
52975	Analysis.....	6.02	10.22	7.26	34.70
	V-C Fertilizers 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
52459	Analysis.....	6.05	12.00	6.47	36.04
52718	Analysis.....	5.96	11.28	6.58	35.08
	V-C Big Giant Crop Grower Guarantee.....	6.00	12.00	6.00	35.40
52711	Analysis.....	5.68	11.04	6.06	33.55
	V-C Champion Crop Grower Guarantee.....	4.00	10.00	7.00	29.30
52534	Analysis.....	4.32	10.91	7.74	31.97
	V-C Fruit and Truck Special Guarantee.....	6.00	10.00	7.00	34.10
52710	Analysis.....	6.18	10.35	7.09	35.05
	V-C Indian Brand Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
53165	Analysis.....	4.20	12.09	4.27	29.29
	V-C Potato Special Guarantee.....	4.00	8.00	10.00	30.20
52528	Analysis.....	4.08	8.45	10.19	31.14
53015	Analysis.....	4.04	8.20	10.03	30.57
53088	Analysis.....	4.01	8.16	10.01	30.42
53266	Analysis.....	4.10	8.40	9.12	29.95
53440	Analysis.....	4.08	8.46	9.45	30.43
53467	Analysis.....	3.99	8.25	9.61	30.05
	V-C Prolific Cotton Grower Guarantee.....	3.00	10.00	3.00	22.50
52529	Analysis.....	3.22	9.93	3.66	23.68
53264	Analysis.....	3.24	10.36	3.89	23.94
	V-C Truckers Special Guarantee.....	4.00	8.00	6.00	25.80
52535	Analysis.....	4.02	8.11	5.57	25.51
52675	Analysis.....	4.07	8.20	5.79	25.98
53016	Analysis.....	4.02	8.25	6.06	26.22
	V-C Super 25 Fertilizer Guarantee.....	5.00	15.00	5.00	35.50
52458	Analysis.....	4.89	14.29	5.64	35.09
	V-C Super 40 Fertilizer Guarantee.....	10.00	20.00	10.00	59.00
53005	Analysis.....	10.04	19.49	10.46	59.00
	V-C 18% Superphosphate Guarantee.....	.....	18.00	.....	21.60
53268	Analysis.....	.....	19.97	.....	23.96